

See also:

Appendix D: Roadway  
Geometry Drawings  
(under separate cover)

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SF Dept. of Public Works

## ENVIRONMENTAL ASSESSMENT

FOR THE

## EMBARCADERO SURFACE ROADWAY PROJECT

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**ENVIRONMENTAL ASSESSMENT**

**for the**

**EMBARCADERO SURFACE ROADWAY PROJECT**

City and County of San Francisco

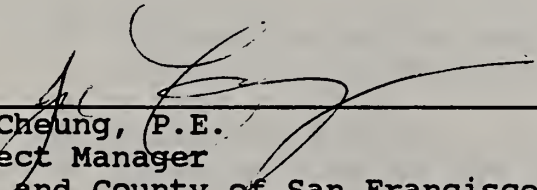
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State of California, Department of Transportation

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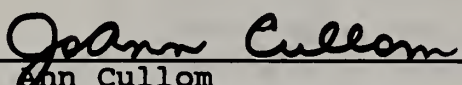
U.S. Department of Transportation, Federal Highway Administration

Pursuant to: 42 U.S.C. 4332(2)(C)



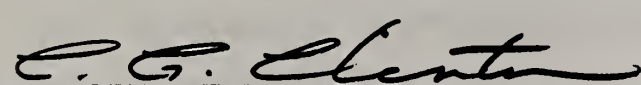
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Joe Cheung, P.E.  
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Federal Highway Administration

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Environmental assessment  
for the Embarcadero  
1990.

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**APPENDICES**

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APPENDIX A - AREA OF POTENTIAL EFFECT MAPS

APPENDIX B - LETTER FROM MICHAEL P. HUERTA, EXECUTIVE DIRECTOR, PORT OF SAN FRANCISCO, TO VITALY B. TROYAN, CHIEF, BUREAU OF ENGINEERING, DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF SAN FRANCISCO

APPENDIX C - LETTER FROM KATHRYN GUALTIERI, STATE HISTORIC PRESERVATION OFFICER, STATE OF CALIFORNIA, TO BRUCE E. CANNON, DIVISION ADMINISTRATOR, FEDERAL HIGHWAY ADMINISTRATION, SACRAMENTO, CA, DATED OCTOBER 22, 1990.

Available at the Department of Public Works, Bureau of Engineering, Fourth Floor, 1680 Mission St., San Francisco, CA.; and Main San Francisco Public Library, Government Documents Room, 1st Floor, Larkin and McAllister Streets, San Francisco, CA.

APPENDIX D - ROADWAY GEOMETRY DRAWINGS

APPENDIX E - EMBARCADERO ROADWAY PARKING STUDY, San Francisco Dept. of City Planning

APPENDIX F - EMBARCADERO ROADWAY TRAFFIC STUDY, DKS Associates, June 1989

APPENDIX G - EMBARCADERO ROADWAY URBAN DESIGN STUDY, Bechtel, Inc., December 1988

APPENDIX H - EMBARCADERO ROADWAY HAZARDOUS WASTE INVESTIGATION, SITE HISTORY REPORT, Geo/Resources Consultants, August 1989.

APPENDIX I - EMBARCADERO ROADWAY PROJECT AREA OF POTENTIAL EFFECT MAP WITH LOCATIONS OF HISTORIC PROPERTIES.

APPENDIX J - EMBARCADERO SURFACE ROADWAY PROJECT, REQUEST FOR DETERMINATION OF EFFECT, AUGUST 1990.

APPENDIX K - EMBARCADERO ROADWAY PROJECT, HISTORIC PROPERTY SURVEY REPORT, AUGUST 1990.

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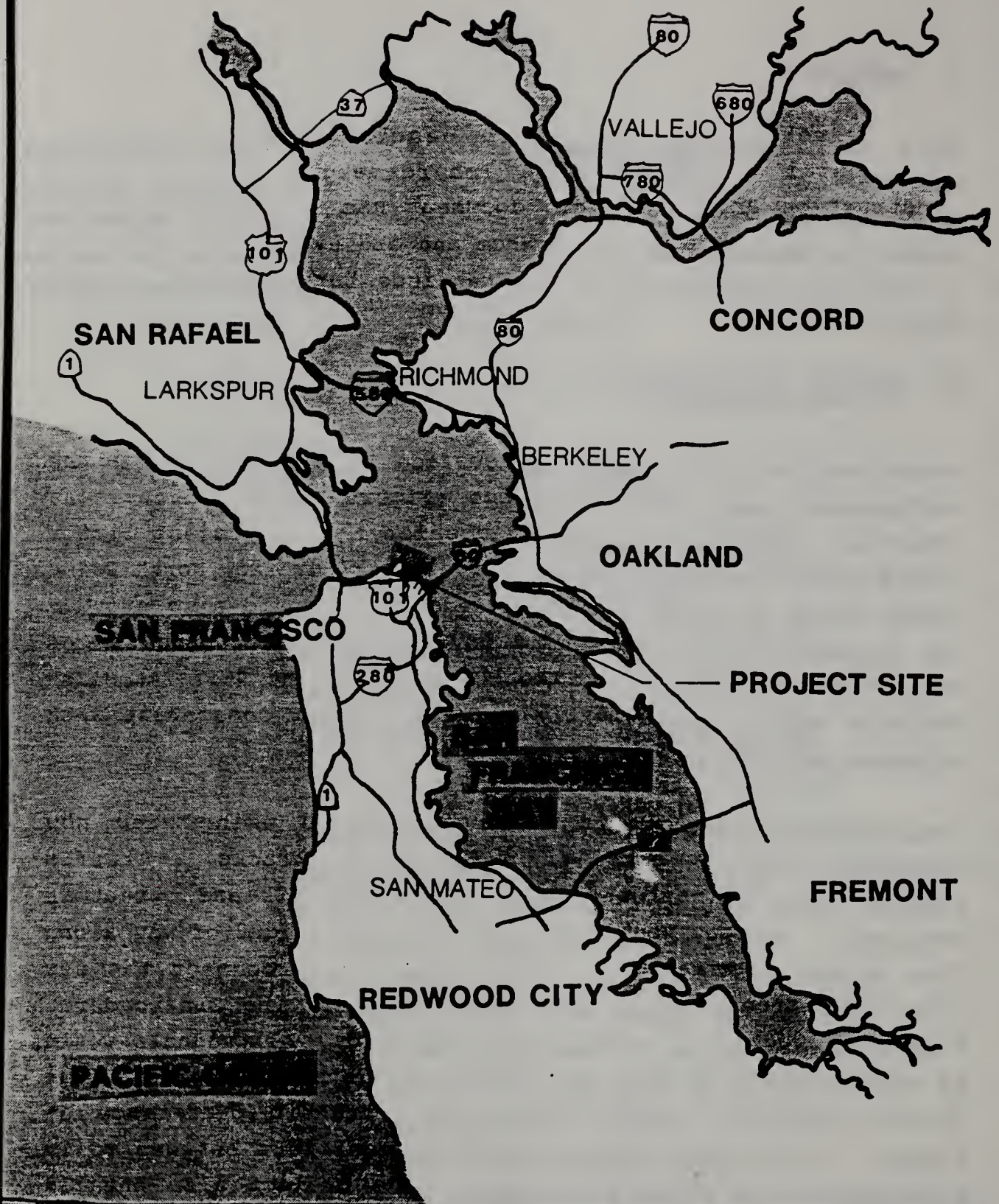
## **I. SUMMARY**

This Environmental Assessment describes the potential environmental impacts of the Embarcadero Surface Roadway Reconstruction Project. This document has several appendices which are incorporated by reference and are available for review at the City and County of San Francisco Department of Public Works.

### **A. Project Description**

Reconstruction of The Embarcadero Surface Roadway, located in the northeastern part of San Francisco (Figure 1), would increase vehicular, bicycle, and pedestrian safety. The project limits extend along the waterfront in a linear corridor from North Point Street south to Sixth and King Streets. It would also provide for increased vehicular turning movements and accommodate the related F-Line Streetcar and the MUNI Metro Light Rail Extension Projects safely, aesthetically and in a manner consistent with adjacent land use plans.

The surface roadway would be reconstructed using area now containing roadway, parking, and railroad tracks. Traffic signals would be interconnected with light rail and streetcar movements. The City would acquire additional right-of-way along King Street and widen it. King Street would connect the new I-280 King Street ramps near Sixth Street to The Embarcadero. King Street would be renamed King Boulevard. All signals would be synchronized on King Boulevard and The Embarcadero to the extent possible, without interrupting transit preference at lights. This would reduce operational conflicts between rail, pedestrian, and vehicle movements. The project also entails restriping, resigning and necessary channelization improvements.



**REGIONAL MAP**

**SCALE:**

**FIGURE 1**

This project was previously studied as one element of the I-280 Transfer Concept Program Environmental Impact Report jointly sponsored by the Urban Mass Transportation Administration, the Federal Highway Administration (FHWA), California Department of Transportation (Caltrans), the San Francisco Bay Area Metropolitan Transportation Commission (MTC), and the City and County of San Francisco.

## **B. Summary of Potential Impacts and Mitigations**

### Transportation and Circulation

Transportation impacts are evaluated in the context of growth projected for the City and the Bay Area. The proposed project is not expected to generate additional traffic, but instead proposes improvements to the existing roadway that will better accommodate transit, pedestrians, and bicyclists, increasing its total people-carrying capacity. These roadway improvements will provide better local street access to The Embarcadero, and improve the movements for left-turning traffic at most intersections. Where this is true, through traffic may be required to experience a longer delay than exists in 1988. While traffic congestion may increase slightly, the roadway right-of-way will accommodate twice as many users due to transit improvements. This will further the City's "Transit First" policy.

### Air Quality

The proposed project is located in a non-attainment region for ozone (O<sub>3</sub>) and carbon monoxide (CO), the two major chemical pollutants associated with motor vehicles. Calculations performed for this project indicate carbon monoxide concentrations at worst case (most congested) intersections do not violate the one-hour or the eight-hour average CO state standards. The same is true for intersections which are less congested. The air quality CO impact is insignificant.

Emissions of sulfur oxides generated by the project would not bring sulfur dioxide concentrations measurably closer to violating the standard.

#### Noise Levels

Existing ambient noise levels are high resulting from the high volumes of traffic traveling on I-80 and State Route 480. Since the project would not add lanes to the roadway, there would be little increase in noise levels. An insignificant increase in noise levels would be caused primarily by increased deceleration and acceleration at new traffic signals. Though there are approximately 30 new signals, they are located throughout the 2.9 mile project corridor and noise increases in any one location are not cumulative.

#### Land Use, Consistency with Plans and Policies

The key policy documents governing the project corridor are the Northeastern Waterfront Plan of the City Master Plan, the Bay Conservation and Development Commission (BCDC) San Francisco Waterfront Special Area Plan, and the BCDC Total Design Plan for Piers 7 through 24. The proposed project responds to the objectives and is consistent with the plans as amended to provide for parking, transit configuration, the bicycle path, and the E-Line vs. the F Line. The Total Design Plan for Piers 7 through 24 and the Northeast Waterfront Plan call for the removal of some parking along the roadway; the project would include on-street parking along the roadway where it does not interfere with the 25 foot promenade or view corridors.

#### Parking

A Parking Study dated May 1989, prepared for this project by the Department of City Planning, indicates that there are 1431 "official and unofficial" parking spaces along The Embarcadero between Pier 40 to the south and North Point Street to the north. Approximately 165 of these spaces are located off street, next to

Port parking lots on the site of former Belt Line tracks. They are considered "unofficial". Of the 1266 "official" spaces located along The Embarcadero, 654 spaces (52%) will be lost due to reconstruction of the roadway. Approximately 479 (full-time) and 133 (off-peak) (a total of 48%) on-street parking spaces would still be provided along the roadway. Other spaces which could be impacted by the proposed roadway alignment include the 79 spaces in front of the Ferry Building.

#### Visual Quality

Much of the existing surface parking within the project corridor will be eliminated, resulting in unobstructed views of the Bay. The addition of landscaping, special pavement and street furniture will combine to enhance the aesthetic quality of The Embarcadero. Proposed lighting levels will be sufficient for pedestrian safety and will be compatible with vehicle needs. Glare will be minimized through the use of diffusers and refractors.

#### Fuel and Energy

The project is not expected to generate an increase in vehicular trips since the number of through roadway lanes is not increased. No substantive amount of additional fuel would be consumed by vehicles using the project corridor or traffic signal and lighting. There would be no measurable increase in the use of fuel or energy.

#### Hydrology and Water Quality

The Embarcadero currently sheet drains directly into the Bay. The proposed project includes a storm drain system to collect runoff and deliver it to a large holding sewer where runoff is stored until it is treated, prior to being released into the Bay.

### Relocation of Businesses

Eighteen businesses located within the proposed project corridor will have to be relocated. All businesses will be provided with advisory assistance, and the actual cost of moving to a new location will be paid by the City with Federal Aid as required by the "Uniform Relocation and Assistance Amendments of the Surface Transportation and Uniform Relocation Assistance Act, Title IV, (1987 Amendments)."

### Hazardous Wastes

Several potential areas of concern have been identified as part of the Draft Site History Report. A soil sampling and testing plan is underway. Results will be reviewed and evaluated before completion of the environmental process. The depth of the excavation varies from fairly shallow under the roadbed to up to ten feet for drainage pipes and catch basin structures. It is likely that some of the water pumped out of excavations will need to be treated as hazardous waste. Construction contracts would provide for the safe and legal handling of such water.

### Cultural Resources

There is little possibility of encountering significant cultural resources from the Prehistoric, Spanish/Mexican, or Early American periods within the Area of Potential Effect. There is, however, documented evidence of the existence of significant, or potentially significant Gold Rush cultural resources. There is also evidence of potentially significant remnants from the City Expansion period occurring between 1860 and 1920.

The location of the proposed storm sewer excavation was compared to locations of potential buried cultural resources. The project excavation would have no effect on The Lydia, a buried ship at King Street and The Embarcadero.

Preconstruction subsurface exploration is proposed near Folsom Street and construction monitoring is proposed on King Street, at North Point Street, and areas where the Old Sea Wall may be encountered.

The proposed project alignment is relatively unchanged from the current roadway alignment, and will not diminish the integrity of any existing structures, including buildings determined to be eligible or potentially eligible for the National Register of Historic Places. The State Historic Preservation Officer has concurred with this determination.

The Belt Line Freight Railway has historic merit. However, its integrity has been severely compromised over the years. The proposed project would remove the Belt Line north of China Basin. The State Historic Preservation Officer has concurred that the Belt Line Railway is not eligible for the National Register of Historic Places.

#### Topography, Geology, Soils and Seismicity

Where the reconstructed roadway crosses the large existing combined (sanitary and storm) box sewer, foundation work may be required to prevent differential settlement of the roadway.

#### Vegetation and Wildlife

The project is in an area which has been extensively modified by human actions. It has not been identified as providing habitat for any rare, threatened, or endangered species of plants or animals. There have been no sightings of rare, threatened or endangered species in the project area.

#### Construction

Construction-related impacts to circulation, air quality and ambient noise would be of short duration in any one location.

### Cumulative Impacts

Several proposed or active projects in the area or adjacent to it include the F-Line Historic Streetcar Extension, the MUNI Metro Extension, MUNI Metro Turnback, I-280 King Street Ramps, Fisherman's Wharf Redevelopment Program, Underwater World at Pier 39, Rincon Point/South Beach Redevelopment Program, a housing or arena/housing development at Seventh and King Streets, Caltrain Station Relocation, and Mission Bay. A brief cumulative impacts discussion of most of these nearby projects is included in this document. A more detailed discussion of the cumulative impacts of all known projects is included in the Stadium Supplement to the Mission Bay EIR.

### **C. The Planning Process**

As part of the planning process, a Technical Advisory Committee (TAC) and a Management Oversight Committee (MOC), both comprised of staff from a number of involved City agencies, have evaluated the progress of the project ranging from the previously prepared Urban Design Study by Bechtel, the preliminary design and geometry of the proposed roadway, to the preparation of this Environmental Assessment. Open public participation workshops and a Citizen Advisory Committee (CAC) have provided additional input described below in Section D.

### **D. Areas of Concern or Controversy**

Six times in the last 18 months, newsletters have been distributed to neighborhood groups, all citizens and businesses identified during the I-280 TCP EIR process, notifying them of upcoming Citizen Advisory Committee (CAC) meetings at which specific topics relating to the proposed projects were discussed. The list of persons and organizations contains over 1000 names.



A clear consensus has not emerged among those individuals advocating strictly curtailed automobile usage along The Embarcadero, and those who desire sufficient lane capacity and accommodation for service and commercial vehicles. Concern still exists among some of the community regarding whether or not improvements to the roadway will encourage commuter traffic between Marin and the South or East Bay, thus conflicting with the concept of the roadway as a transit and pedestrian oriented corridor. Residents from the North Point area have demonstrated strong opposition to additional lanes of traffic between Bay and Battery Streets and would like to divert northbound Golden Gate Bridge traffic onto Broadway rather than Bay Street.

Another concern of the residential community is the relative location of the F-Line and the roadway between Battery and Bay Streets. Some community members feel the F-Line should only be placed in the median if the purpose of the project is to attract through motorists, a goal to which they are opposed. However, unless the F-Line is placed in the median, a measurable degradation of transit service will occur and a considerable increase in transit/auto conflicts will be created.

The Port and its lessees are concerned about the net loss of on street parking on The Embarcadero (52%). The Port would have preferred that replacement parking be included as a project improvement. The City and the Port continue to investigate the possibility of replacement parking structures as a separate project. The Federal Highway Administration, Urban Mass Transportation Administration, Caltrans, and the Metropolitan Transportation Commission made a decision not to fund intercept parking from the I-280 Interstate Transfer funds. The Port is also concerned that the project will not increase capacity for through traffic and will reduce its ability to conduct business. However, on October 5, 1989, the Port granted working design

approval for the Embarcadero Roadway project as well as the associated transit projects. The Port has stated its commitment to successful completion of the project.

Issues of citizen concern related to the roadway project include the number of traffic lanes, and the type and width of accommodations for runners, joggers and bicyclists. Other issues of citizen concern include the viability of shared use of rail by Muni Metro and Caltrain along The Embarcadero to the Ferry Building and the possibility of express Muni Metro transit service during commute hours (trains direct from Market Street to the Caltrain Station).

#### **E. Approvals Required**

A public hearing will be held on this Environmental Assessment in order to receive written and oral comments. These comments will be incorporated into the Environmental Assessment document. This document will in turn be presented to the California Department of Transportation (Caltrans) and the Federal Highway Administration. The Metropolitan Transportation Commission will perform a project review. The San Francisco Bay Conservation and Development Commission (BCDC) has performed a federal consistency review and has found that the roadway improvements are consistent with the Commissions's federally-approved management program for San Francisco Bay (Memo from Alan R. Pendleton, Executive Director, BCDC, to Peg Divine, Project Manager, Waterfront Transportation Project, dated October 4, 1990). A BCDC permit will be obtained once design specifics for the project have been determined. The Port Commission will approve the final design.

## II. PURPOSE AND NEED

The proposed reconstruction and realignment of The Embarcadero would occur generally within the existing Embarcadero right-of-way with the exception of a two block segment between Howard and Harrison. Reconstruction would permit the addition of a waterfront promenade, sidewalks, bicycle facilities and landscaping, in compliance with existing land use policies which are discussed later in this report.

The Northeastern Waterfront Plan (1990 revision), an element of the City's Master Plan, adopted in 1977, calls for improved transportation facilities along The Embarcadero. The Plan calls for reconstruction of the roadway as a parkway with provisions for a rail transitway along its length. The Master Plan identifies The Embarcadero as a Major Thoroughfare, the purpose of which is to connect districts of regional and city-wide significance.

Reconstruction of the Embarcadero surface roadway would increase the ability of intersections to handle vehicular turning movements, pedestrians, and the planned F-Line Streetcar and the MUNI Metro Extension safely, aesthetically and in a manner consistent with adjacent land use plans. The proposed reconstruction and realignment would increase vehicular, pedestrian, and bicyclist safety while allowing for increased transit access by local and regional residents and commuters.

Traffic signals would be interconnected with light rail and streetcar movements. This would reduce operational conflicts between rail vehicles and other vehicles or pedestrians. All signals would be synchronized to the extent feasible on the new King Boulevard and The Embarcadero. It is anticipated that synchronization can be achieved in groups of three to five intersections.

The existing Embarcadero roadway has traffic signals at only five locations within the project limits. Stop signs are used at several key intersections. Many streets intersect The Embarcadero at oblique angles. Left turns and U-turns, where permitted, are currently made against oncoming traffic at locations with and without stop signs.

Currently, lane markings and diagonal and parallel curbside parking are not well defined. On-street parking currently interferes with traffic flow by slowing traffic in right-hand lanes, resulting in potential conflicts. Driveways into port and landside facilities are not easily visible from driving lanes or the edge of the traveled way.

The current Belt Line alignment has various deficiencies for mass transit use. The existing Belt Line track shares right-of-way with traffic lanes on King Street and is west of the southbound curb along The Embarcadero south of Folsom. Closer to the Ferry Building, existing rail placement is centered under the freeway while in other locations, the tracks cross travel lanes in transition from the sides to the middle of the roadway. Interconnection of proposed rail transit movements along the existing alignment with traffic signals, is not possible without a sizeable decrease in intersection capacity and safety.

Much of The Embarcadero Surface Roadway is operating near capacity during commute periods. San Francisco is expected to remain a dominant office center in the Bay Area and much of the new development is expected to occur in the Embarcadero/King Street corridor, especially south of Market Street. Information obtained from the Association of Bay Area Governments, indicates that the residential population along the project corridor is expected to increase from 16,000 to 43,000 in the next 15 years. In addition, ABAG projects a citywide employment increase of approximately 104,000, and the City an increase of as many as

90,000 by the year 2000. A large percentage of the additional employees is expected to work within or adjacent to the project area. Consequently, the existing traffic and transit deficiencies will worsen, particularly during the weekday commute, unless capacity improvements particularly for transit are provided.

((1))

### III. INTRODUCTION

#### A. Background

In the 1960's, FHWA Interstate Highway System plans included the extension of I-280 from its current terminus at 4th Street to the Bay Bridge and the Embarcadero Freeway (Route 480). In 1973, an amendment to the Federal Highway Act authorized withdrawal of unconstructed segments of the Interstate System and provided that funds targeted for withdrawn segments could be used for projects in the region serving the same transportation needs. The Board of Supervisors approved a resolution requesting withdrawal of the proposed 1.4 mile segment from I-280 to the Embarcadero Freeway (Route 480) in 1980, because of citizen opposition to an elevated waterfront freeway. In 1981, the U.S. Department of Transportation approved the request to withdraw the segment.

I-280 Transfer Concept Program (TCP) studies were conducted in order to evaluate alternative sets of projects to improve transportation in the I-280 corridor in the absence of the I-280 freeway extension. An Environmental Impact Report was prepared for the I-280 TCP which discussed the impacts of these alternative sets of projects. The EIR was certified in June 1985. That EIR met the requirements of the California Environmental Quality Act (CEQA) but additional detail regarding individual projects is needed to meet the needs of the National Environmental Policy Act (NEPA). The subject of this Environmental Assessment, the Embarcadero Surface Roadway, is a variation on Alternatives IV and IVA with some modifications.

Alternatives IV and IVA include the reconstruction of the Embarcadero Surface Roadway in a new configuration in order to provide for safe transit interface, improved handling of turning movements and progression between traffic signals. They also include light rail transit projects along The Embarcadero and

additional I-280 ramps at King Street. The I-280 TCP EIR concluded that the proposed alternative sets of projects are feasible solutions to substitute for the withdrawn segments of I-280. On June 26, 1985, a majority of the San Francisco Port Commission passed a resolution recommending that some of the projects from the I-280 Transfer Concept Program be approved as "Preferred Projects" and that appropriate steps be taken to move them forward toward implementation. The approved projects include: the Embarcadero Roadway as a boulevard with necessary turning bays from Second Street (boundary of Port jurisdiction) to Bay Street. In November 1985, the Board of Supervisors adopted the I-280 TCP EIR.

In June 1986, San Francisco voters approved a non-binding ballot measure to exclude demolition of the Embarcadero Freeway (elevated Route 480) from the I-280 Transfer Concept Program. It was then excluded. The retained elevated freeway provides an alternate route for local access between Broadway and Folsom Streets.

This Environmental Assessment (EA) was prepared pursuant to the requirements of NEPA to assess and describe the environmental impacts of one of the program projects, the Embarcadero Surface Roadway Project.

The Embarcadero Urban Design Study was prepared by Bechtel Civil, Inc., Urban Designers in 1988. The study encompasses the Embarcadero Surface Roadway Project and three related projects including the Muni F-Line, the Muni Metro Extension and the Muni Metro Turnaround. The Study establishes a preferred design concept for the project, including general alignment and space requirements for each of the transportation elements. It also evaluates compliance with regional plans and the San Francisco Master Plan, addresses existing requirements for waterfront physical and visual access, considers parking placement, and documents citizen participation. Among the Study's goals are



improved access to the Bay, accommodation of all modes of circulation, linkage of distinct communities and the creation of a more attractive and inviting Embarcadero.

## **B. Regional Setting**

The proposed project is located in the northeastern part of the City of San Francisco along the Bay waterfront (Figure 1). The project area, referred to as the The Embarcadero corridor, is a significant transportation route. It provides access to several important City neighborhoods including the downtown, waterfront piers, Chinatown, North Beach, Telegraph Hill, Fisherman's Wharf, Fort Mason, and the developing and proposed Rincon Point, South Beach and Mission Bay communities. It is used heavily by residents, industry, commuters and tourists. Four major freeways provide access through or to the project area. They are Routes 101 and 480, I-280 and I-80. Several public transportation systems deliver passengers to or near The Embarcadero including BART, Caltrain Peninsula Commute Service, Muni, AC Transit, Samtrans, Golden Gate Bus and Ferry Transit, and Red and White/Blue and Gold Ferries.

## **C. Project Description**

Three alternative transit/roadway alignments from Sixth and King Streets north to North Point Street were studied in the Urban Design Study. The preferred alternative, called the "hybrid", combines the best solutions for engineering and urban design of the roadway. This alternative is discussed below.

The proposed \$84 million Embarcadero surface roadway project has several components which include reconstruction of the surface roadway from King Street to North Point Street as well as medians, bikeways, pedestrian walkways, landscaping, street furniture, and relocation of the Belt Line Railroad. Related projects within and outside the project area are briefly discussed in this section.

### The Roadway





The project consists of roadway reconstruction extending from the proposed I-280 ramps between Fifth and Sixth Streets on King Street to The Embarcadero, and then north on The Embarcadero to North Point Street (Figure 2). For convenience, the project which is approximately 2.9 miles long is discussed in four segments below. Drawings of the entire roadway are included in Appendix D.

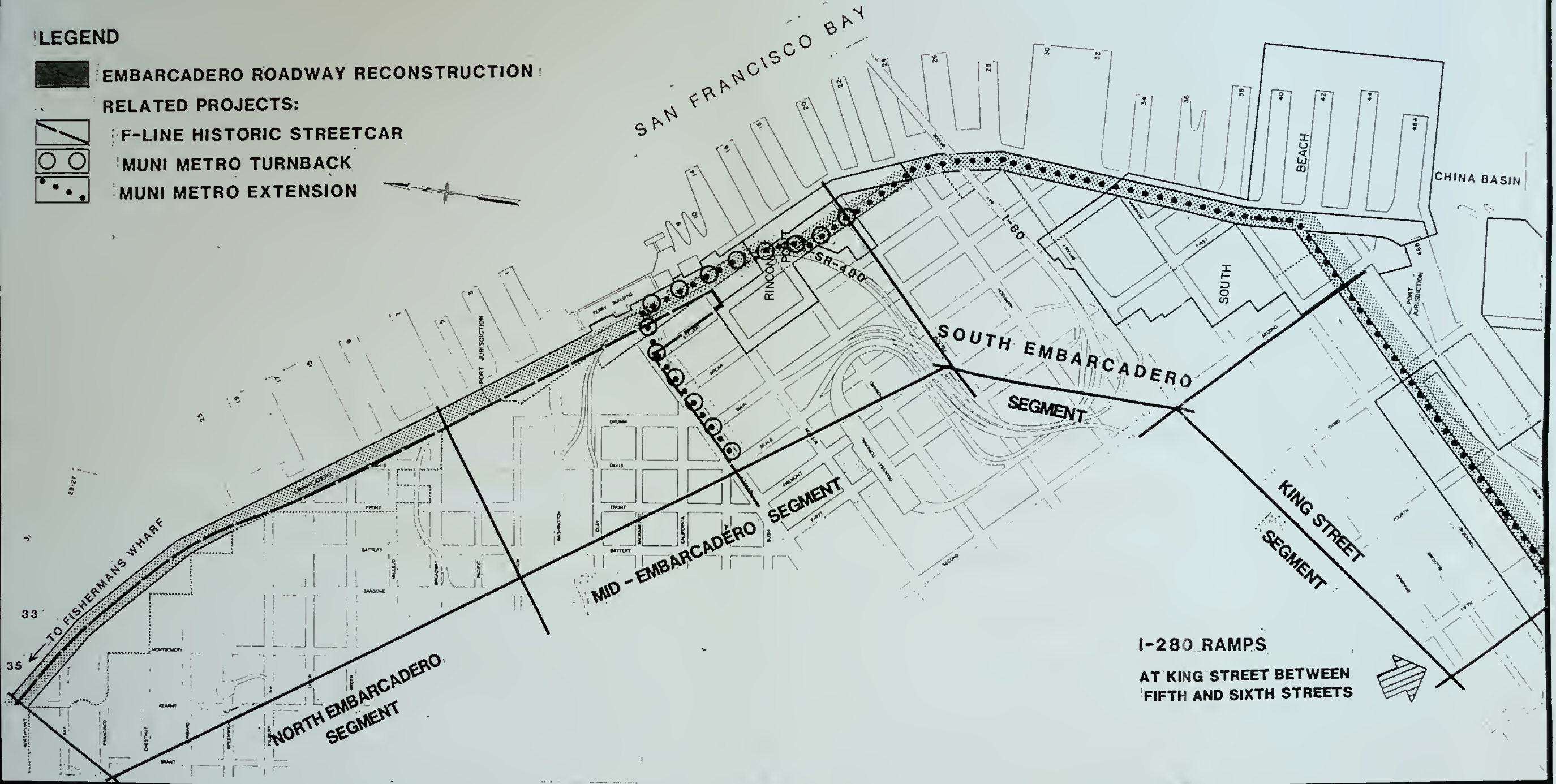
The Embarcadero Surface Roadway would function as a collector and distributor arterial. The introduction of signals with left-turn phases at intersections with left-turn pockets would allow through movements and reduce blockage behind left-turn movements. Right hand lanes would have better flow characteristics due to elimination of most of the curbside parking.

Reconstruction of The Embarcadero would include better definition of travel lanes, parking and driveways. Reconstruction would include freight track removal and realignment of several street intersections along The Embarcadero to provide right angle intersections. The improvements are expected to reduce the current rate of accidents and to allow increased use with reduced conflicts.

King Street Segment (from Sixth Street to approximately Second Street). The City proposes to acquire additional right-of-way along the King Street

**LEGEND**

-  EMBARCADERO ROADWAY RECONSTRUCTION
- RELATED PROJECTS:**
-  F-LINE HISTORIC STREETCAR
-  MUNI METRO TURNBACK
-  MUNI METRO EXTENSION



SCALE: NTS

**FIGURE 2**

THE UNIVERSITY OF CHICAGO  
DEPARTMENT OF CHEMISTRY  
5800 S. UNIVERSITY AVENUE  
CHICAGO, ILLINOIS 60637



THE UNIVERSITY OF CHICAGO  
DEPARTMENT OF CHEMISTRY  
5800 S. UNIVERSITY AVENUE  
CHICAGO, ILLINOIS 60637

corridor (increasing the width to between 150 and 158 feet). King Street would connect the new I-280 King Street on- and off-ramps near Sixth Street to the Embarcadero Roadway. King Street, renamed King Boulevard, would have two through-lanes in each direction with additional peak period use of off-peak parking lanes in each direction between Third and Fifth Streets. In addition, single or double left-turn pockets would be provided at intersections to serve left turns. Figure 3 shows a typical segment of the proposed King Boulevard configuration.

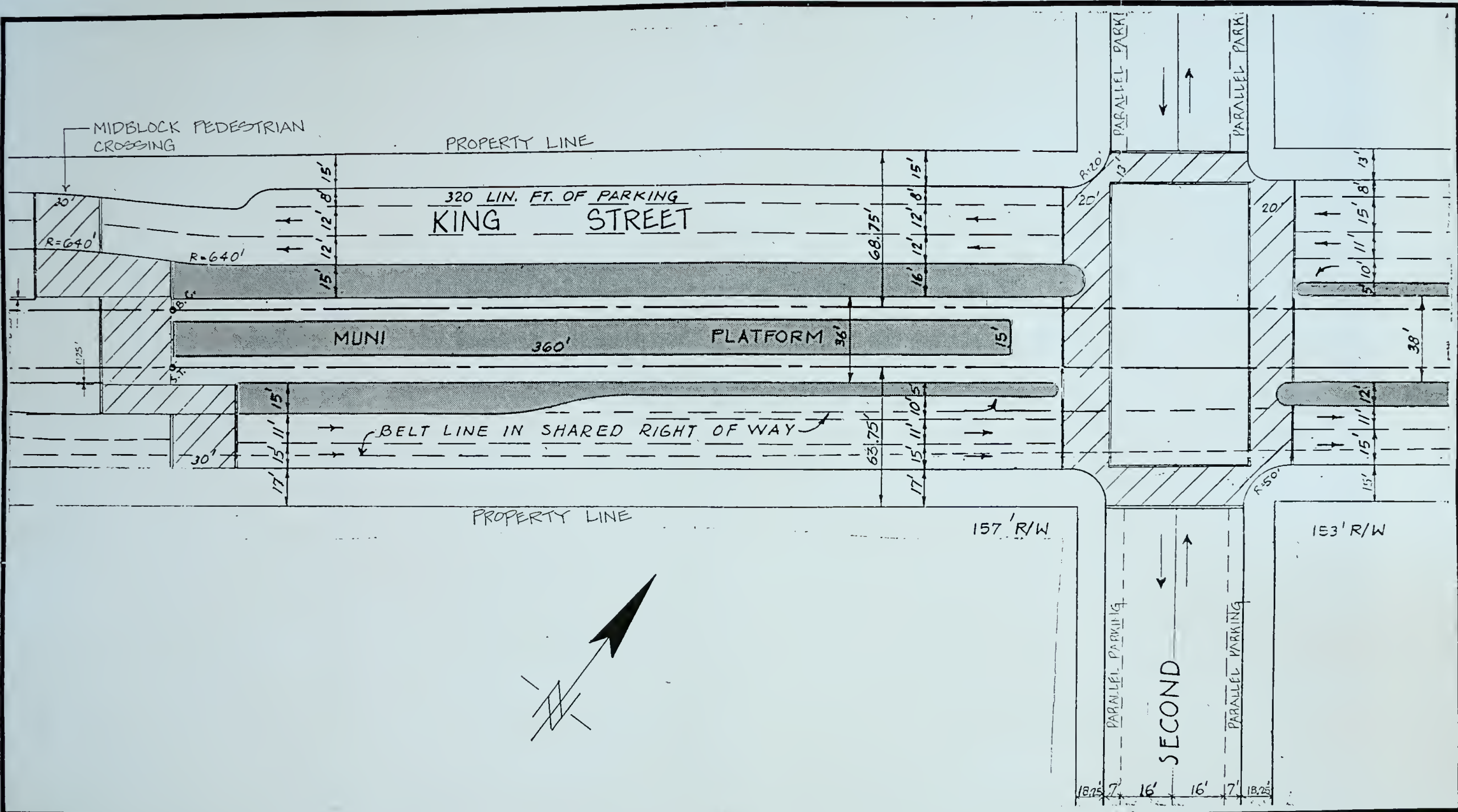
The proposed Muni Metro Extension would be located in the center median of The Embarcadero and King Street from Howard Street to Sixth Street. The tracks would be separated from the vehicular travel way by raised curbs and islands.

South Embarcadero Segment (from approximately Second Street to Folsom Street). The transition from King Street to The Embarcadero is proposed to be a sweeping curve. The Embarcadero would continue as a four lane boulevard (two lanes in each direction) between Second and Folsom Streets as shown in Figure 4. The alignment, which parallels the waterfront, would be relatively unchanged from the current alignment. As in the King Street segment, the MUNI Metro Extension tracks and boarding platforms would be in the center median of the roadway. At Harrison Street, the alignment shifts toward the west into the Steuart Street right-of-way to provide space for the Redevelopment Agency's Rincon Point Park, a large waterfront park on the east side of the proposed roadway.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud. The text also mentions the need for regular audits and the role of independent auditors in ensuring the reliability of financial statements.

The second part of the document focuses on the role of the accounting profession. It highlights the need for accountants to adhere to high standards of ethical conduct and to maintain their professional competence through continuous education. The text also discusses the importance of transparency and accountability in the financial reporting process.

The third part of the document addresses the challenges faced by businesses in the current economic environment. It discusses the impact of global economic uncertainty and the need for businesses to adapt to changing market conditions. The text also mentions the importance of innovation and the role of government in supporting business growth and development. Finally, the document concludes with a call for continued collaboration between businesses, government, and the accounting profession to ensure the stability and growth of the financial system.



**EMBARCADERO ROADWAY  
KING STREET SEGMENT (TYP)**

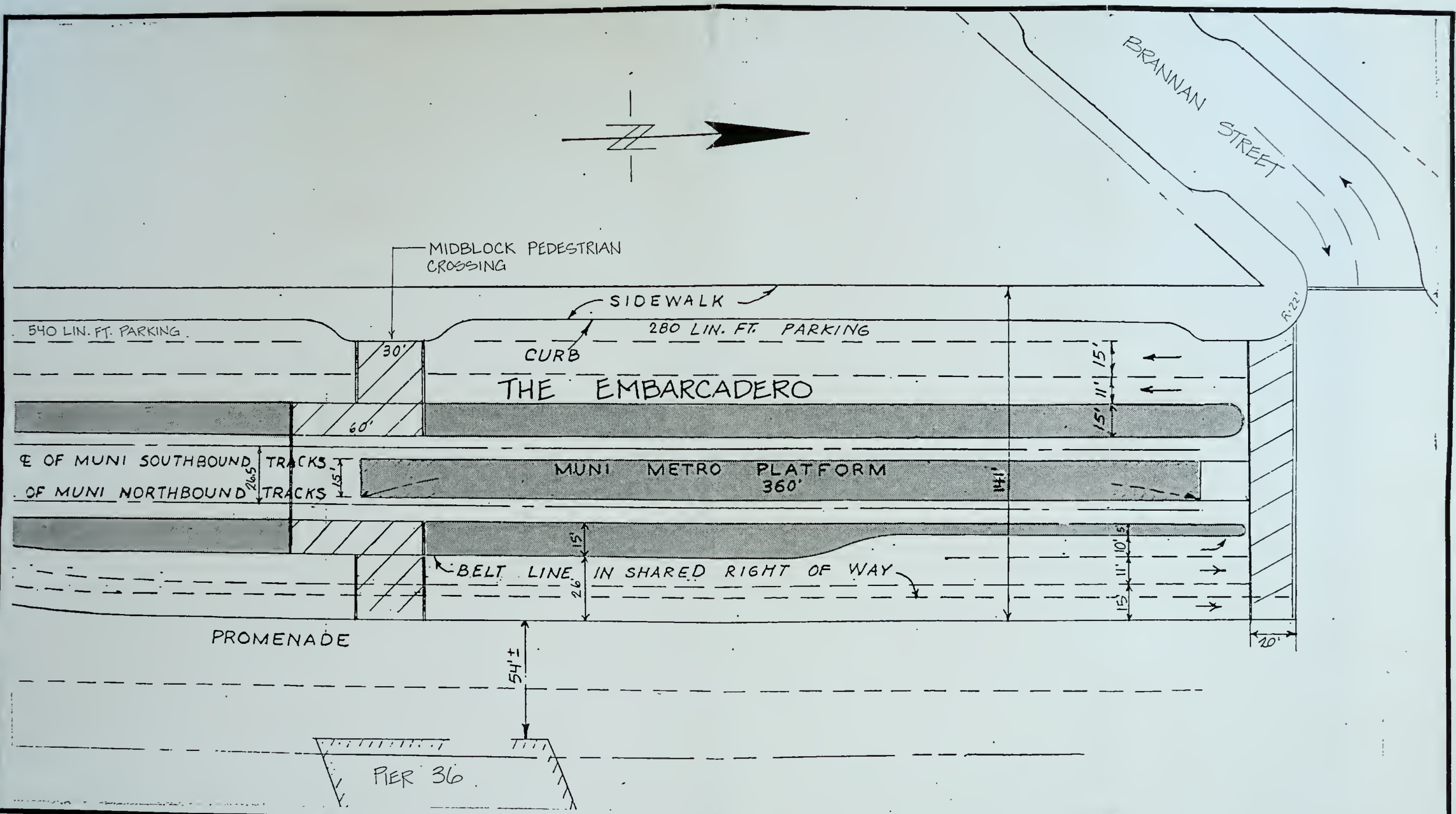
SOURCE: DPW, CIVIL ENGINEERING SECTION

SCALE: 1"=40'-0"

FIGURE 3







**EMBARCADERO ROADWAY  
SOUTH SEGMENT (TYP)**

SOURCE: DPW, CIVIL ENGINEERING SECTION

SCALE: 1"=40'-0"

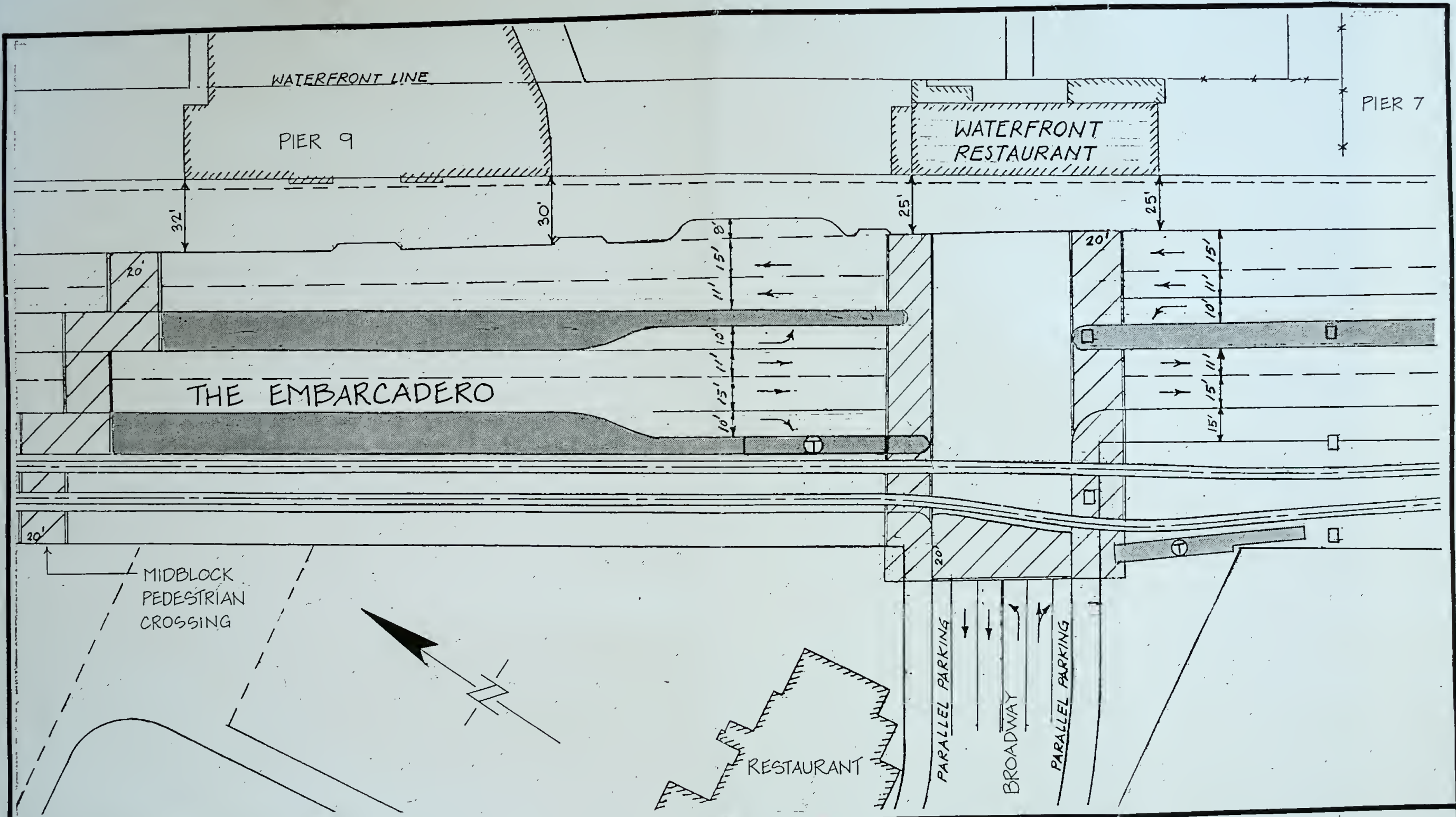
FIGURE 4



Mid-Embarcadero Segment (from approximately Folsom Street to Broadway). Just north of Folsom Street, Muni Metro rails would begin their descent down to the subway elevation. In the area between Howard Street and Broadway (Figure 5), The Embarcadero would have two lanes northbound, east of the Route 480 elevated freeway structure. A median would be provided. The two southbound roadway lanes would be primarily under the elevated freeway. North of Market Street the proposed F-Line Historic Streetcar tracks would be to the west of the Embarcadero roadway (as shown in the section at Pier 23 in Figure 6) until just south of Battery Street.

North Embarcadero Segment (from approximately Broadway to North Point Street). From Broadway to Battery Street, the roadway would continue as a four lane boulevard similar to its current alignment. The entire roadway would include a landscaped or paved median. Union, Front and Vallejo Streets would not intersect The Embarcadero. Green Street would be made a through street to intersect with The Embarcadero providing direct truck access into Pier 15/17. At Battery Street, the streetcar tracks would cross the southbound lanes into the median (Figure 7). Shifting the F-Line to the median would reduce the conflicts with eastbound and southbound right-turning vehicles at the most heavily used intersections in this segment of The Embarcadero (Bay, Battery and Sansome).

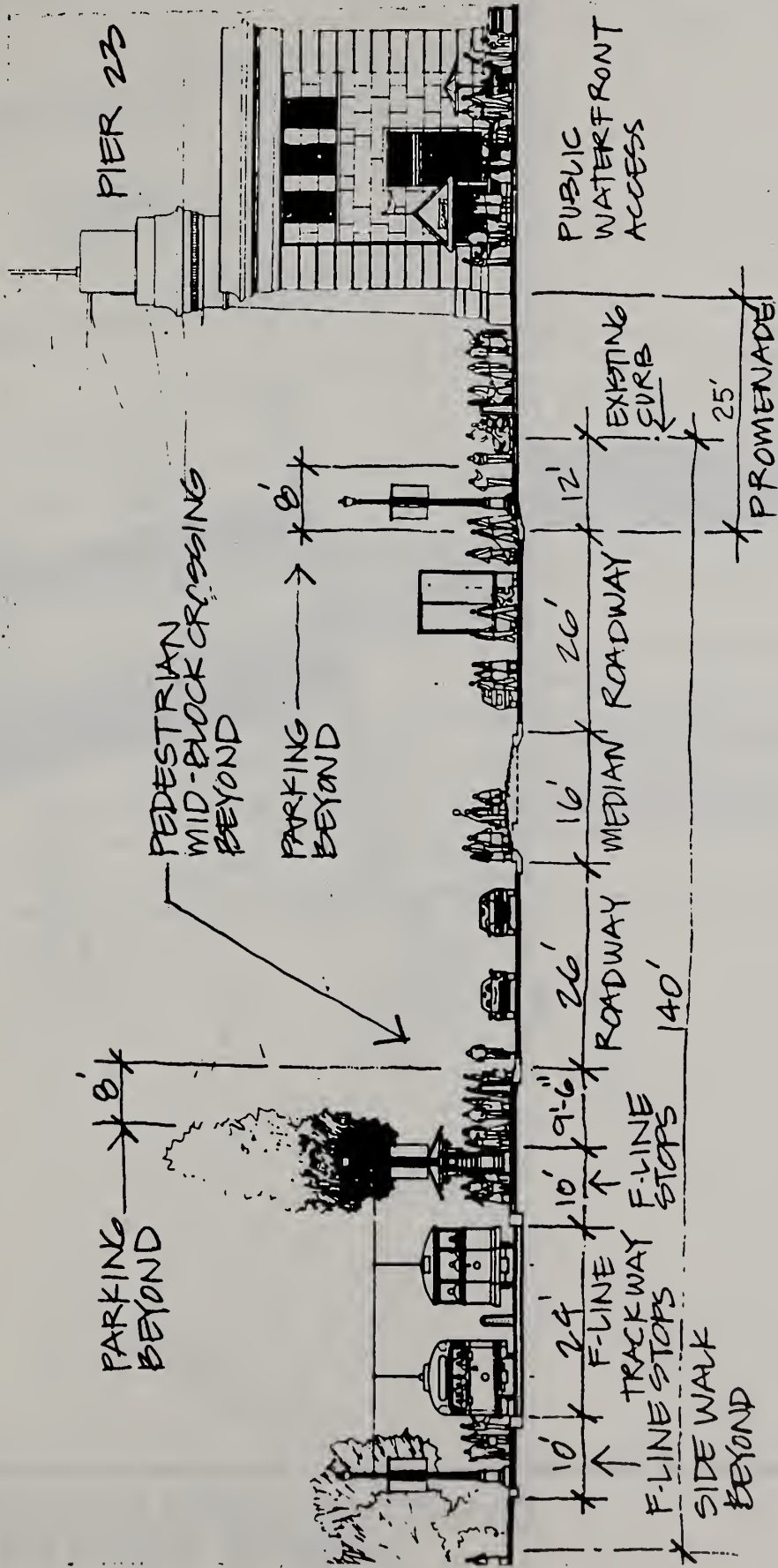
[The text in this section is extremely faint and illegible. It appears to be a multi-paragraph document, possibly a report or a letter, but the specific content cannot be discerned.]



**EMBARCADERO ROADWAY  
NORTH SEGMENT (TYP)**  
SOURCE: DPW, CIVIL ENGINEERING SECTION

SCALE: 1" = 40'-0"  
FIGURE 5





SECTION AT PIER 23

# EMBARCADERO ROADWAY BETWEEN BROADWAY & BATTERY STREET

SCALE:

SOURCE: URBAN DESIGN STUDY, BECHTEL INC.

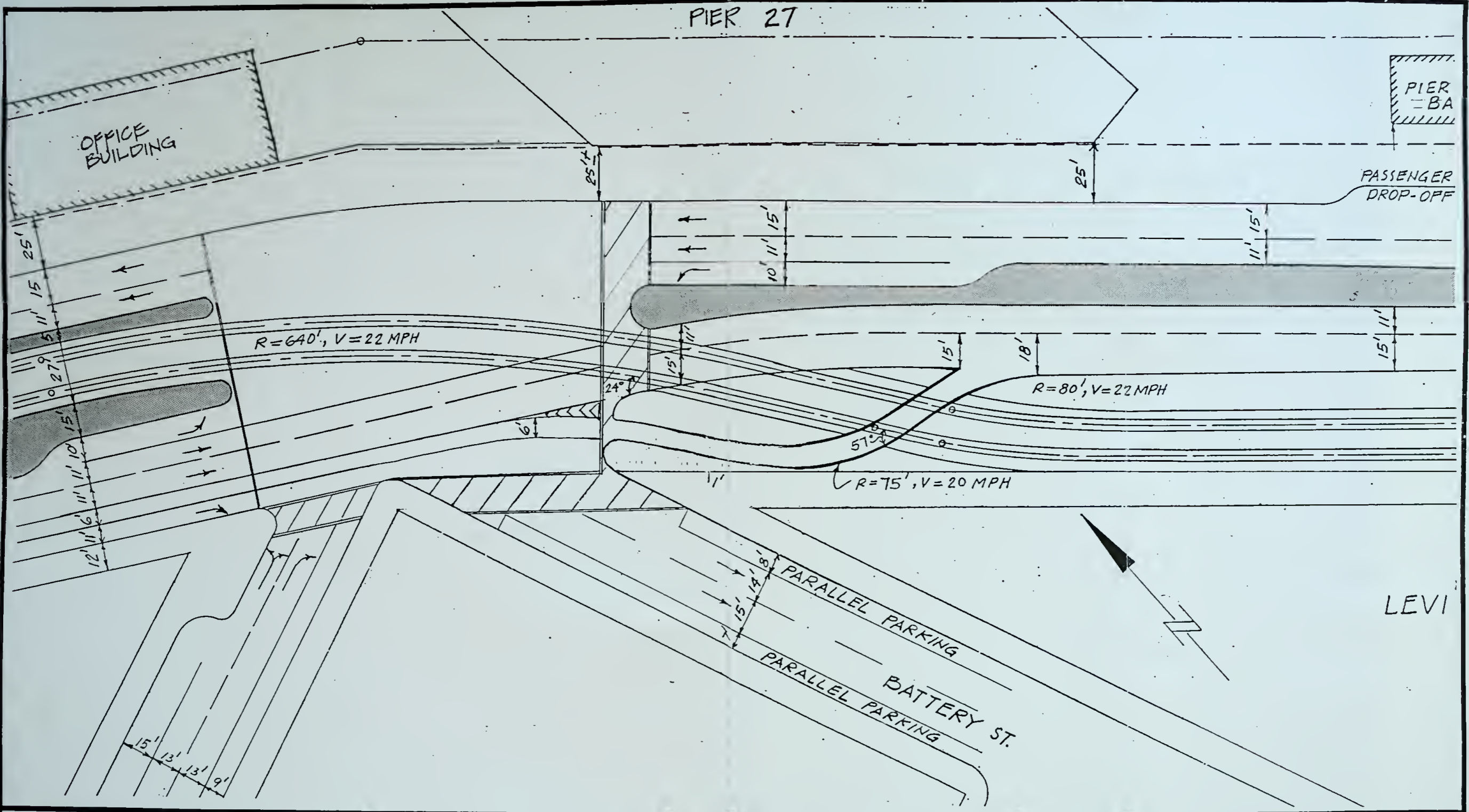
FIGURE 6

MEMORANDUM FOR THE RECORD  
SUBJECT: [Illegible]

[Illegible]







**EMBARCADERO ROADWAY  
AT BATTERY STREET**

SOURCE: DPW, CIVIL ENGINEERING SECTION

SCALE: 1"=40'

FIGURE 7



Belt Line Freight Tracks

The City proposes to remove all existing freight tracks within the roadway. The tracks have been used once in the last 5 years, and were last used for revenue service in 1983.

If the proposed Mission Bay project is constructed, it would include realignment of the Belt Line tracks south of China Basin.

Currently, Southern Pacific Transportation Company tracks proceed north between Pennsylvania Avenue and Indiana Street, then curve westward following Seventh Street, to a yard between King and Townsend Streets. Under the Mission Bay Plan, freight tracks would be replaced along the following alignment: from Indiana Street east on Eighteenth Street to Third Street. The passenger tracks and station location are being studied by the Joint Powers Board.

Post Earthquake Considerations

On October 17, 1989, there was an earthquake in the San Francisco Bay Region. At that time, the elevated Embarcadero Freeway (SR 480) was damaged. The California State Department of Transportation is currently assessing the extent of the damage. In the event that the decision is made to remove the Freeway from above the Embarcadero surface roadway, the proposed project would require some modifications. A modified project could include a depressed roadway for through traffic, or a surface roadway of four to six through lanes. The roadway would be similar in alignment to the above description in the areas south of Folsom Street and north of Broadway Street, where it would be two lanes in each direction with turn pockets. If a decision is made to remove the Route 480 freeway structure, the configuration

between Broadway and Folsom would vary from that proposed in this document and would be evaluated with a separate environmental document(s).

#### D. Related Projects

(Within project boundaries - Figure 2)

##### 1. I-280 King Street Ramps

This project proposes to remove the eastbound off-ramp at Fourth Street and the I-280 Freeway structure between Sixth and Third Streets. A pair of new two-lane on- and off-ramps would be constructed connecting the freeway with King Street between Fifth and Sixth Street to provide access to The Embarcadero. The I-280 ramps curving northward onto Sixth Street would remain. A Draft Environmental Assessment is expected to be published in Fall 1990.

##### 2. Muni Metro Extension

MUNI proposes to extend Muni Metro service from Market Street to approximately Sixth and King Streets. It would provide a direct connection between BART, Caltrain, and other regional transit systems. The extension would serve the redeveloping southern part of the Northeastern Waterfront as well as the northern area of the Central Waterfront. These areas include the Central Business District, the Rincon Point/South Beach Redevelopment Area, and the proposed Mission Bay development. Five Metro stations are planned along The Embarcadero and King Street. Pedestrian crossings at intersections and in the middle of some blocks would be provided to enhance safety and promote MUNI patron access.

This project is statutorially exempt for CEQA review, but was included in the CEQA-certified I-280 Transfer Concept Program Environmental Impact Report. Because no federal funds are being used for the project, no federal environmental documentation is required.

### 3. Muni Metro Turnback Project

In 1989, the Urban Mass Transportation Administration approved the Environmental Impact Statement (EIS) for the Muni Metro Turnaround Project. The EIS described impacts of various alternatives. The alternative selected by the San Francisco Public Utilities Commission and approved by the Urban Mass Transportation Administration (UMTA) is the Underground Switching Alignment. The tracks and switches would be located underground from Market Street to just south of Howard Street. The mainline tracks would proceed from Market Street in a tunnel extension under Justin Herman Plaza, then southeasterly in a subway tunnel constructed using an open cut-and-cover method, under the Embarcadero Freeway. As the tracks incline toward the surface, their alignment curves west near Howard Street onto Steuart Street in the proposed Embarcadero Surface Roadway median. All turnback movements would occur underground. The Muni Metro Turnaround would provide more efficient switching operations to accommodate increased MUNI patronage in the Market Street subway by providing more frequent and reliable service.

### 4. The F-Line Historic Streetcar Extension

The proposed Muni F-Line Streetcar service would run from Market Street, south a half block on Steuart Street, and then east through the existing bus layover lot. It would then proceed in a northerly direction, west of the proposed southbound roadway lanes along the alignment that currently forms the southbound lanes, up to Washington Street. The F-Line would be located where the Belt Line Freight tracks currently are between Washington and Battery Street. At Battery Street, the F-Line tracks would curve into the median and continue north and west

into the Fisherman's Wharf area along Jefferson, Jones, and Beach Streets. An Environmental Assessment is currently being prepared for the F-Line Extension and a draft should be available in December 1990.

### **Related Projects**

(Outside of project boundaries)

#### 1. Peninsula Commute Service (Caltrain) Station Relocation

Caltrain is the commuter rail service that currently serves the San Francisco Peninsula between San Jose and San Francisco. The existing terminal is located at Fourth and Townsend Streets and is not considered desirable from a transportation or land use perspective. The area being studied for relocation sites is bounded by Market Street, The Embarcadero, China Basin Channel, and Seventh Street. Several project alternatives are being considered in the search to identify the most cost effective and desirable location for a downtown terminal. These alternatives include a no build alternative, a low cost capital improvements alternative, and others with terminus stations at Market Street or the Transbay Terminal. An interim terminal may be located at Seventh and Townsend Streets. An Draft Environmental Impact Report/Environmental Impact Statement is being prepared by the Joint Powers Board staff from San Francisco, Santa Clara and San Mateo Counties to be submitted to its Technical Advisory Committee in late 1990 and then to Urban Mass Transportation Administration in late 1990 or early 1991.

#### 2. Mission Bay

The Santa Fe Pacific Realty Corporation has proposed a 325-acre mixed use development in the northern part of the Central Waterfront Area generally bounded by Townsend, Seventh, Mariposa, and Third Streets. Primary land uses would be commercial and residential, with additional service, light industry and research and development. Detailed planning and

environmental impact analyses for Mission Bay have received public comments and are undergoing separate review. Implementation of the Mission Bay development plans would require amendments to the City's Master Plan and City Planning Code. A Development Agreement is currently being negotiated between Santa Fe Pacific and the City which would define project components and implementing responsibilities between the City and the developer.

Part of this agreement allows the City the discretion to develop a site at Seventh and Townsend Streets as it sees fit. Proposals for this site have included a 20,000 seat indoor arena, housing, or a combination of the two.

### 3. Rincon Point/South Beach (RPSB) Redevelopment Program

The approved RPSB Redevelopment Plan and EIR propose a mixed use development which would include office, retail, warehousing and residential, as well as open space and a marina. The marina and several residential complexes have already been developed. In conformance with the Redevelopment Agency's plan for the area, Harrison and Bryant Streets are among those streets to be modified to improve traffic flow and circulation. Streets which have been closed to through traffic are First and Beale Streets. Townsend and Brannan have been realigned to intersect the Embarcadero roadway at right angles.

### 4. Fisherman's Wharf Redevelopment Program

A Redevelopment "survey area" was designated on the Northern Waterfront in December 1987. The survey area includes the area bounded by Van Ness Avenue, North Point Street, Columbus Avenue, Francisco Street, Powell and Bay Streets, Pier 33 and the US Pier Head Line in the Bay. Planning work on the Redevelopment survey area is being conducted jointly by the San Francisco Department of City Planning, the Redevelopment Agency, and the Port of San Francisco. A citizen's advisory committee has been formed to work with the City agencies. The Redevelopment Program is considering four alternative land use plans for Port properties,

vacant properties, and any future changes to existing private properties. This effort is expected to result in the preparation of an Area Plan resulting in amendments to the San Francisco City Master Plan and the Planning Code, and adoption of a Redevelopment Plan. The City is currently in the process of preparing an EIR for the Fisherman's Wharf Redevelopment Area. A draft is anticipated in mid 1991.

#### 5. Underwater World at Pier 39

This proposed project is an aquarium and educational facility built on piles over the Bay in the Pier 39 marina and attached to the existing Pier 39 development. The approximately 50,000 square foot aquarium would contain a lobby, tanks, a book shop, and tidal pool, as well as lab rooms and administrative offices. Access to the project is from The Embarcadero. The project proponent proposes to increase parking in the Pier 39 garage by 100 to 120 spaces by restriping and improving the circulation system in and around the garage. The Final Environmental Impact Report was certified in May 1989.

#### 6. Metro East Maintenance Facility

Muni requires an additional maintenance facility to service new light rail vehicles needed to augment and replace the cars currently used. Muni proposes building the facility in southern Mission Bay, accessed by non-revenue tracks from Sixth and King Streets curving southward along the Seventh Street corridor and beyond. An Environmental Impact Statement will be prepared for this facility.



### **E. Project Permits and Approvals**

A public hearing will be held on The Embarcadero Surface Roadway Environmental Assessment in order to receive written and oral comments. These comments will be incorporated into the Environmental Assessment document. This document will in turn be reviewed by Caltrans and the Federal Highway Administration.

The San Francisco Bay Conservation and Development Commission (BCDC) performs a consistency review for all federally funded projects and has determined that the project is in compliance with the McAteer-Petris Act, the San Francisco Bay Plan, and the Federal Coastal Zone Act. A BCDC permit will be obtained once design specifics for the project have been determined.

In a January 1980 hearing, the Planning Commission approved amendments to the Master Plan and made a consistency determination. An encroachment permit from Caltrans will be required during surveying and construction.

The Port of San Francisco owns the piers, The Embarcadero and adjacent "seawall lots" west of the roadway. Until 1968, the Port was a State agency. At that time the Port became a City agency under the provision that the lands be held in trust by the San Francisco Port Commission under the jurisdiction of the State Lands Commission. The State Lands Commission determines whether proposed use of port land meets public trust provisions. The Port Commission has exclusive powers to manage and operate the Port of San Francisco lands. All matters involving these lands must be decided upon by the Port Commission and cannot be reversed by the Board of Supervisors or the Mayor.

Unlike other streets within Port jurisdiction, The Embarcadero is not a city street. There is an approval process for the development of non-Port sponsored projects on, immediately adjacent to, or having the potential to impact Port property,

which entails submitting proposed projects to the appropriate Port department for review. That department will in turn recommend to the Executive Director whether the project should be submitted to the Port Commission for approval. There are three stages of review which include a schematic design review, a working design review and a final review (contract documents). The project is evaluated in terms of its potential impacts on port operations, port land value and revenues, land uses, parking supply, and maintenance. The City was notified by the Port of its approval of the working design (Urban Design Study and geometry drawings) for the proposed improvements to the Embarcadero Roadway on October 25, 1989.

#### **F. Project Schedule**

Construction in the Embarcadero corridor will be divided into four segments. The various projects (Muni Metro Turnback, Muni Metro Extension, Roadway, and Muni F-Line Extension) are planned to be constructed simultaneously within those segments. The currently estimated dates of construction are shown in Table 1, The Waterfront Transportation Projects Master Schedule. More accurate schedules will be developed during the design phase of each project.

**TABLE 1**

**MASTER SCHEDULE**

**WATERFRONT TRANSPORTATION PROGRAM**

Adopted By the Waterfront  
Policy Steering Committee

June 14, 1990

DESCRIPTION	1990				1991				1992				1993				1994				1995											
	J	F	M	A	J	F	M	A	J	F	M	A	J	F	M	A	J	F	M	A	J	F	M	A	J	F	M	A				
<b>Environmental Studies</b>																																
Roadway Environmental																																
F-Line Environmental																																
Urban Design - Phase II																																
Hazardous Waste - City Ordinance																																
<b>South Embarcadero Folsom - 3rd &amp; King</b>																																
Hazardous Waste Study (Caltrans Phase)																																
Land Acquisition & Relocation																																
Preliminary Engineering (Roadway)																																
Design (Roadway)																																
Design (Multi Extension) (Consultant)																																
Rail Procurement Contract																																
Adv./Award																																
Construction																																
<b>Mid-Embarcadero (Depressed Roadway Alternative)</b>																																
Broadway - Folsom Environmental (As Required)																																
Land Acquisition & Relocation																																
Freeway Demolition																																
Design (Turnback) (Consultant)																																
Adv./Award (Turnback, F-Line, Depr Rd, Surf Rd)																																
Construction (Turnback, F-Line, Depr Rd, Surf Rd)																																
<b>Mid-Embarcadero (Freeway Retrofit Alternative)</b>																																
Broadway - Folsom Land Acquisition & Relocation																																
Design (Turnback) (Consultant)																																
Adv./Award (Turnback)																																
Construction (Turnback)																																
Design (Roadway & F-Line)																																
Adv./Award (Roadway & F-Line)																																
Construction (Roadway & F-Line)																																
<b>North Embarcadero North Point - Broadway</b>																																
Preliminary Engineering (Roadway)																																
Design (Roadway)																																
Preliminary Engineering (F-Line)																																
Design (F-Line)																																
Adv./Award																																
Construction (Roadway & Rail)																																
<b>King 3rd - Berry</b>																																
Election Mission Bay Office Ceiling Exempt																																
Land Acquisition																																
Preliminary Engineering																																
Design (Roadway)																																
Design (Multi Extension) (Consultant)																																
Adv./Award																																
Construction (Roadway/Rail)																																
<b>6th St. Ramps (Caltrans)</b>																																
Plan & Envr.																																
Design																																
Land																																
Adv./Award																																
Construction																																



### G. Project Cost

The estimated costs for the Embarcadero Roadway Reconstruction Project currently include \$2,700,000 for environmental studies, \$3,000,000 for engineering, and \$17,000,000 to \$33,000,000 for acquisition of public and private land within the proposed right-of-way. The preliminary construction cost estimate is \$58,000,000 which includes inspection, contract administration, and contingency. The above cost estimates include escalation to 1992, the anticipated mid-point of construction. The \$58,000,000 construction cost includes all of the rough grading and drainage for the related transit projects. The approximate proportioning of costs by section is: Northern Embarcadero, 30%; Mid-Embarcadero, 25%; Southern Embarcadero, 30%; and King Street, 15%. The sources of funding for the roadway project are the FHWA Interstate Transfer funds, State Bill No. 1750, State Highway Account funds, San Francisco local funds, the Santa Fe Pacific Realty Corporation, and Sales Tax.

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#### IV. SETTING

This chapter describes the setting and features of both the social and physical environment of the Embarcadero Surface Roadway project area. The existing conditions described in this chapter are helpful as a baseline to compare the extent of potential impacts.

##### A. LAND USE

Since the 1890's, the City has served as the employment and marketing center for the Bay Area. The bridges, highways and tunnels linking the City with the rest of the Bay Area have created an integrated regional economy.

Historically, land uses in the project area have been industrial and maritime oriented. Retail and office establishments were concentrated in the area around Market Street, west of the project area. Shifts in land uses have occurred in the past 30 years. The trend has been primarily from shipping, warehousing, and manufacturing uses to more dense commercial, office, and residential uses. Some of the northeastern waterfront piers are still in active maritime use, but the surrounding area has become commercial, office and most recently, residential. These land use shifts create a need for different access and circulation patterns.

Zoning designations within and adjacent to the project corridor include Heavy Industrial (M-2), Light Industrial (M-1), Commercial Business (C-2), Downtown Office (C-3-0), Public District (P), and Residential-Commercial Combined (RC). These are illustrated in Figure 8.

The first part of the document is a letter from the author to the editor. The letter discusses the author's interest in the journal and the possibility of publishing a paper. The author mentions that they have a paper on the topic of [illegible] and would like to know if the journal is interested in it. The letter is dated [illegible] and is signed by [illegible].

The second part of the document is a letter from the editor to the author. The editor thanks the author for their letter and expresses interest in the paper. The editor asks for more information about the paper and the author's contact details. The letter is dated [illegible] and is signed by [illegible].

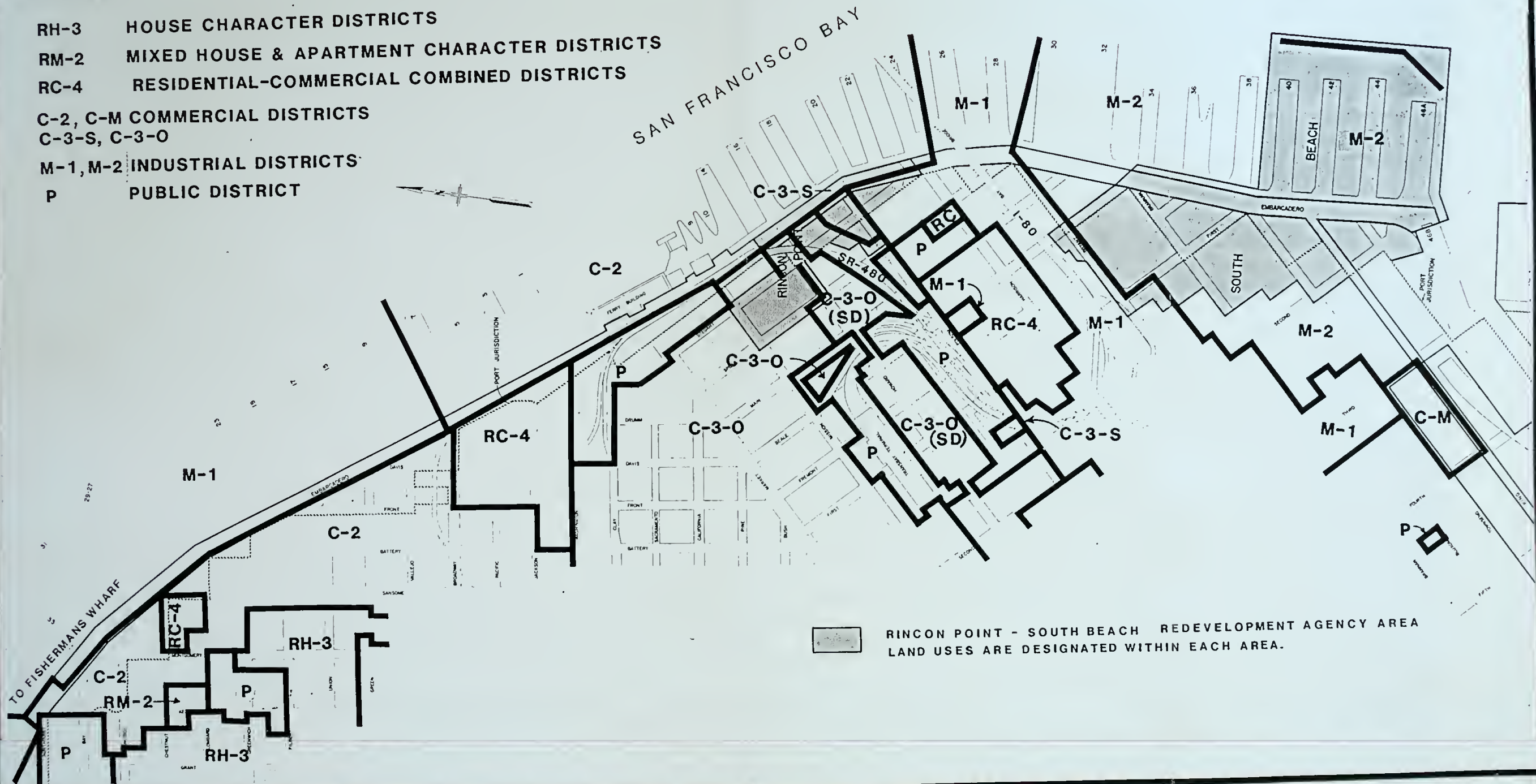
The third part of the document is a letter from the author to the editor. The author responds to the editor's letter and provides more information about the paper. The author mentions that they have a draft of the paper and would like to know if the journal is interested in it. The author also provides their contact details. The letter is dated [illegible] and is signed by [illegible].

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**LEGEND**

- RH-3 HOUSE CHARACTER DISTRICTS
- RM-2 MIXED HOUSE & APARTMENT CHARACTER DISTRICTS
- RC-4 RESIDENTIAL-COMMERCIAL COMBINED DISTRICTS
- C-2, C-M COMMERCIAL DISTRICTS
- C-3-S, C-3-O
- M-1, M-2 INDUSTRIAL DISTRICTS
- P PUBLIC DISTRICT



**ZONING MAP**

SOURCE: S.F. DEPARTMENT OF CITY PLANNING  
 THIS PRELIMINARY MAP HAS NOT BEEN CHECKED FOR ACCURACY.

SCALE: NTS

FIGURE 8



King Boulevard. The King Street (China Basin) area is primarily a combination of industrial-warehouses and vacant lots. This is the area of the proposed Mission Bay Development. North of this area is the Redevelopment Agency's Rincon Point/South Beach project which is presently being developed into multi-family residential units (Bayside Village, South Beach Marina Apartments and Delancey Street). It is also the site of the potential Rincon Point/South Beach National Historic District (proposed San Francisco South End Historic District).

South of Market Street. In recent years, the land use has changed from primarily commercial/industrial to a mix of commercial, residential, and light and heavy industrial. Between South Beach and Market Street along The Embarcadero, inland land uses are primarily a mix of industrial, institutional and office-commercial. Existing height limits are 40 feet and 84 feet which are intended to achieve a transition zone between the waterfront and the more intensely developed Downtown. Piers 24 through 40 are located to the east of The Embarcadero. Many of the piers are in need of repair and/or replacement. Currently Piers 38 and 40 are used for ship repair and Pier 24/26 is the subject of development proposals for an International Yachting Center. Pier 30/32 no longer contains any buildings and is currently vacant. The Port considers it a prime development site. The Ferry Building area contains a mix of office/retail uses and commuter ferry facilities.

North of Market Street. Existing land uses inland of The Embarcadero adjacent to the Financial District include parks, plazas and open space, a concentration of office buildings near Market Street, and a mix of

residential and commercial between Washington Street and Broadway. Currently Pier 1 is used for parking. A project is proposed consisting of partial rehabilitation of the Ferry Building, Agriculture Building, and new construction on Pier 1. Offices and a restaurant would be housed in a new building. The Pier 1 bulkhead building would be replicated and contain a garage. Pier 7 is in the process of being converted to major open space, public access fishing pier. North of Pier 7 on the bayside of the roadway, piers and buildings are primarily maritime office and warehouse. Cruise ships call at Pier 35 and dinner cruises depart from Pier 33.

#### **Relevant Plans and Policies - Land Use**

##### Northeastern Waterfront Plan

The project site is discussed in detail in the Northeastern Waterfront Area Plan (1980) of the City's Master Plan and the Plan states that "the overall goal of the Plan is to create a physical and economic environment in the northeastern waterfront area which will use the area's resources and potential in the manner which will best serve the needs of the San Francisco community."

Plan goals are to retain and enhance maritime activities by providing for maritime activities, while at the same time diversifying the other land uses in this area to promote maximum public use, economic vitality and environmental quality.

Policies specific to the roadway project include prohibiting any increase in the capacity of the roadway system along the shoreline, improving transit service to encourage the reduction of automobile traffic, removing much of the parking in the area and relocating necessary parking inland.

The Plan identifies areas for additional high density housing in the North China Basin Area, with neighborhood commercial areas to serve it. It also identifies areas of open space to be developed with waterfront parks and a promenade along the east side of the roadway in the area between Piers 7 through 24 (proposed Rincon Park) which would connect to open spaces to the north and south.

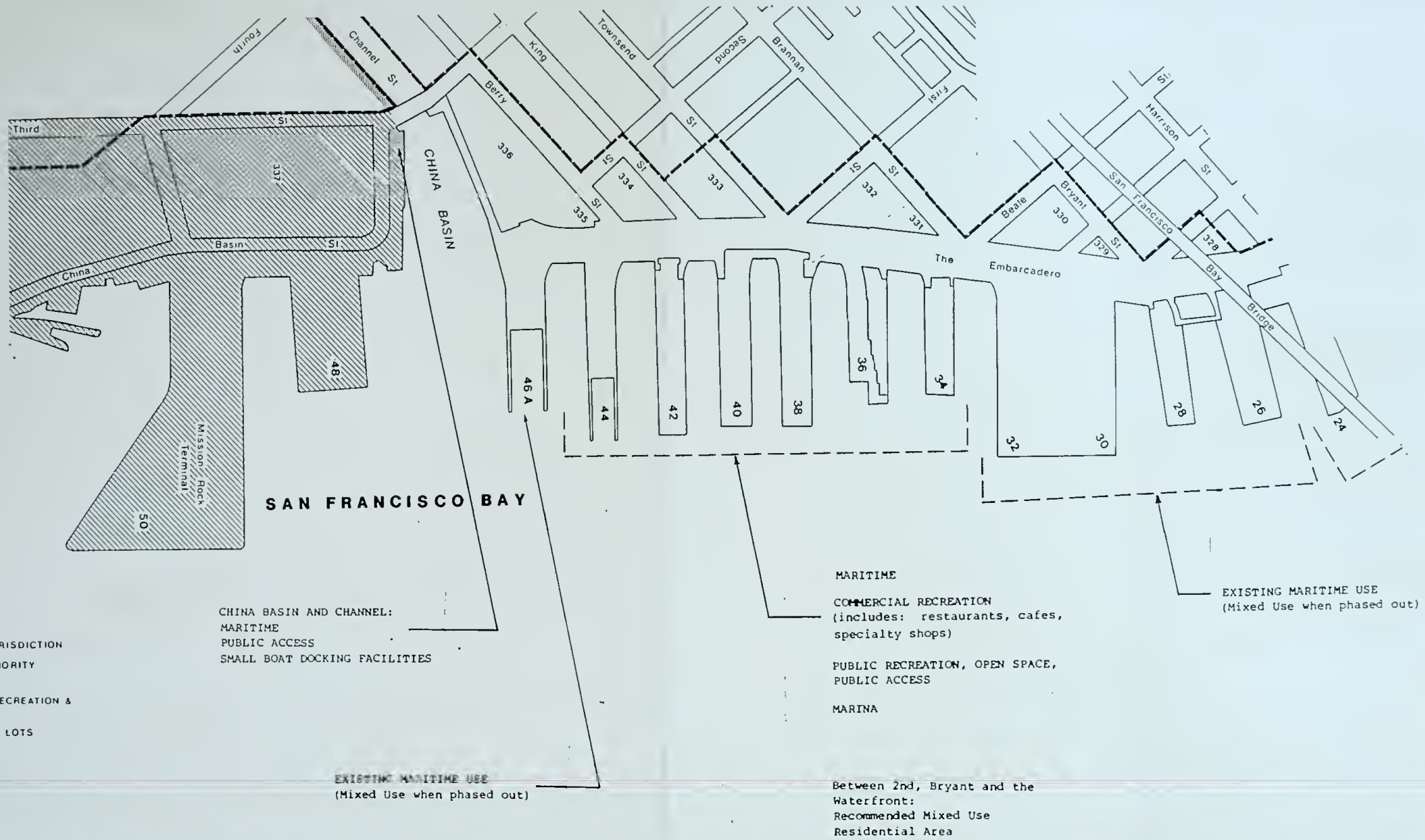
#### The San Francisco Bay Plan

The San Francisco Bay Plan developed by the San Francisco Bay Conservation and Development Commission (BCDC) guides development along the entire bayfront, including The Embarcadero corridor. The primary objectives of BCDC, created in 1965, are to protect the Bay as a natural resource for the benefit of present and future generations, and to develop the Bay and its shoreline to their highest potential with a minimum of Bay filling. Several policies included in the Plan regarding public access, scenic views and recreation are applicable to the proposed project.

#### San Francisco Waterfront Special Area Plan

This plan prepared in 1975 contains policies relating primarily to permitted uses and conditions for those uses on piers. The Plan area extends from the Hyde Street Pier to India Basin and includes the project area. The project area is shown in Figures 9 and 10. It has been adopted by BCDC, the Port and the City Planning Commission, and is part of the Bay Plan. It prescribes a set of policies and recommendations for maritime and non-maritime shoreline development along the waterfront. In addition, it addresses public access and open space. The plan states that Piers 26 through 32 should be used for maritime use, Piers 9 through 35 should continue in maritime use as long as economically feasible; and Piers 34 through 40 should be used for a marina, commercial, recreation, and public open space. It suggests that, over time, connecting buildings between piers should be removed in order to open up views.

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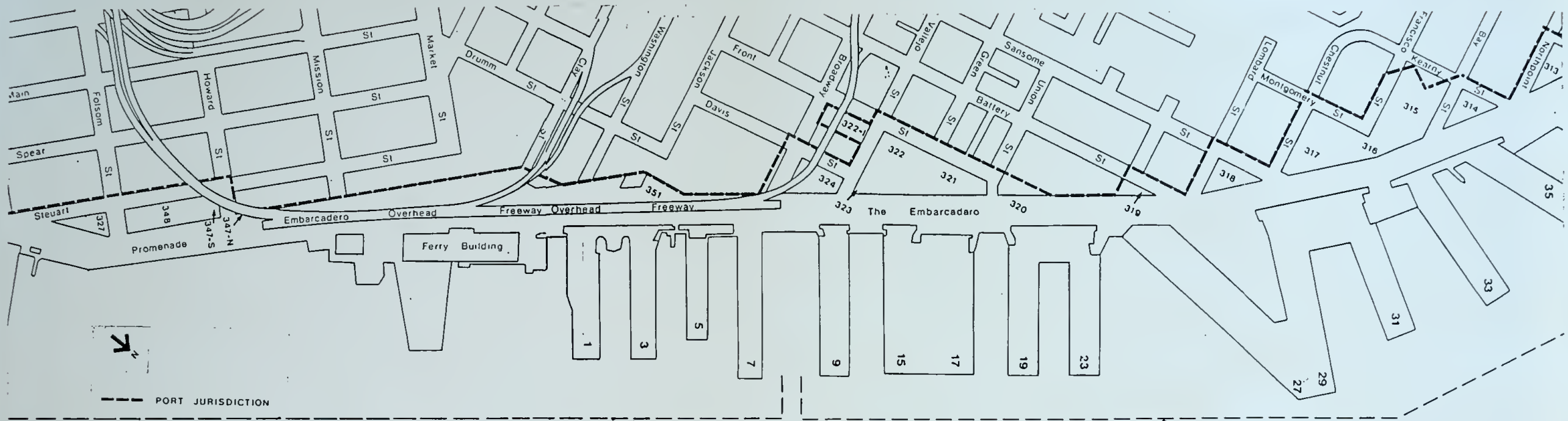
# WATERFRONT SPECIAL AREA PLAN

SOURCE: BCDC

FIGURE 9







SAN FRANCISCO BAY

- COMMERCIAL RECREATION  
(includes restaurants, cafes,  
specialty shops, theaters, and  
concert halls)
- HOTELS-BOATELS (Total no more  
than 800 rooms)
- MARINA (no public launching ramp)
- PUBLIC RECREATION, OPEN SPACE,  
PUBLIC ACCESS
- MARITIME (includes pilot boats,  
tug boats, fire boats, ferries)

EXISTING MARITIME USE  
Design Plan required when  
Maritime phased out

# WATERFRONT SPECIAL AREA PLAN

SOURCE: BCDC

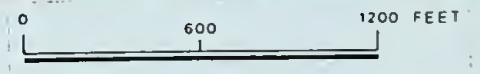


FIGURE 10



### Total Design Plan

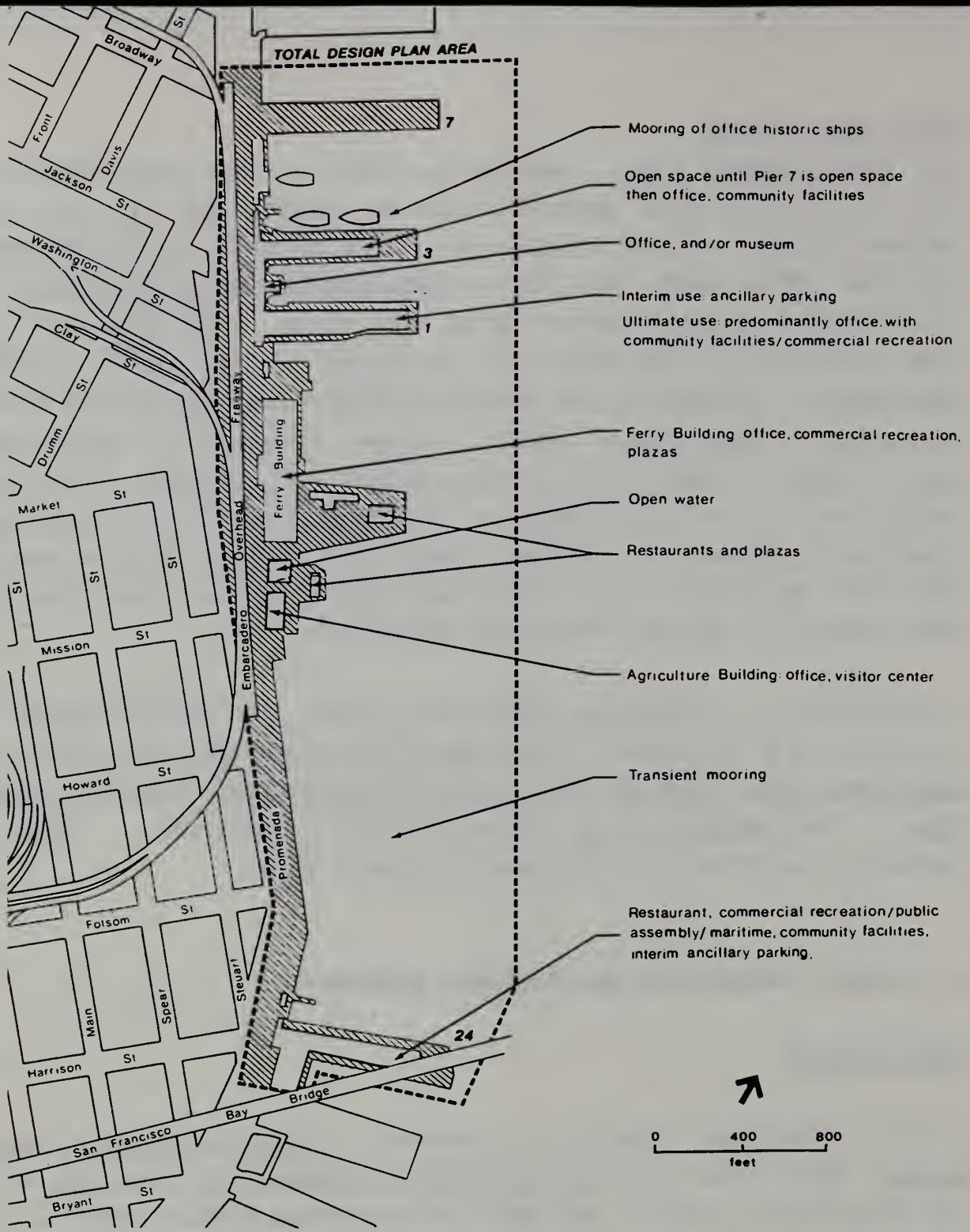
The Total Design Plan adopted by BCDC in 1980 and amended in 1986, provides more specific design guidelines for the area between Piers 7 and 24 (Figure 11). The plan was a collaborative planning effort with the City's Northeastern Waterfront Plan and incorporated recommendations from that plan. This Plan has also been adopted by the Port and endorsed by the City Planning Commission. Permitted uses between Piers 7 and 24 include public recreation, open space, public access, commercial, recreation, and maritime. Some of the design guidelines include maintaining grade-level view corridors to the Bay, removing dilapidated portions of piers and bulkheads, removing exposed surface parking from over the water, under the Embarcadero Freeway, and along The Embarcadero to improve shoreline appearance.

In addition to documents mentioned above, the Port's plans and policies are included in the Maritime Strategy II, 1979, the Maritime Master Plan for the Southern Waterfront, and the Seaport Plan. The Seaport Plan is an MTC/BCDC document. Work is currently underway on a revised Strategic Plan.

## **B. HISTORIC NARRATIVE AND CULTURAL RESOURCES**

### INTRODUCTION


In 1983, Caltrans District 4 prepared a Historic Poverty Survey Report (HPSR) for the I-280 Transfer Concept Program EIR which was certified in 1985. The Area of Potential Effect (APE) of the proposed set of projects was determined by the Urban Mass Transportation Administration (UMTA) and the federal Highway Administration (FHWA). All buildings, structures and archaeology within the APE were evaluated. The Embarcadero Surface Roadway project falls entirely within the APE that was delineated for the I-280 Transfer Concept Program EIR. A more specific Area of



Mooring of office historic ships  
 Open space until Pier 7 is open space then office, community facilities  
 Office, and/or museum  
 Interim use: ancillary parking  
 Ultimate use: predominantly office with community facilities/commercial recreation

Ferry Building office, commercial recreation, plazas  
 Open water  
 Restaurants and plazas  
 Agriculture Building office, visitor center

Transient mooring  
 Restaurant, commercial recreation/public assembly/ maritime, community facilities, interim ancillary parking.

 Open Space, Public Recreation.  
 Public Access, Promenade  
 3 Piers

SOURCE: Department of City Planning, 1980

# TOTAL DESIGN PLAN AREA MAP

SOURCE: BCDC TOTAL DESIGN PLAN FOR PIERS 7 - 24 FIGURE 11

Potential Effect was approved for this project by FHWA. Maps of the Roadway APE are included in Appendix A. FHWA has determined that the previously prepared HPSR applies to the currently proposed Embarcadero Surface Roadway project.

The San Francisco Landmarks Board was consulted regarding resources within the APE and regarding the effect of the project on those resources.

### **HISTORIC NARRATIVE**

The following excerpts were taken from the Historic Properties Survey Report (HPSR) prepared by Caltrans District 4 in 1983. The complete text and references may be found in that document.

#### **Past Environment**

The San Francisco Bay region has been subject to significant environmental changes during the past 15,000 years; the most relevant of which have resulted from world-wide rising of sea levels following the Wisconsin Glacial Period. The changes which most affected prehistoric cultural activity in the Bay area were the alteration of the coastline and the formation of estuaries and marshes.

#### **Prehistory (2500 B.C. - 1500 AD)**

The prehistoric way of life in the San Francisco area can be characterized as a hunting and gathering network of subsistence systems. Subsistence patterns included the exploitation of marine resources and hunting land mammals.

#### **Protohistoric (and Early Historic) Period (1500 AD - 1770 AD)**

The California Indians who occupied the San Francisco Peninsula at the time of European contact are known as the Costanoans. The term Costanoan is derived from the Spanish work "Costanos" meaning coast people. No native name for the Costanoan people as

a whole is known to have existed in prehistoric times. Scholars believe the Costanoans were neither a single ethnic group nor a political entity.

The Spanish established seven missions within Costanoan territory between 1770 and 1797. During the Mission Period (1770-1835), the Costanoan people experienced devastating disruption of their lifeways. Analysis of the Mission records demonstrates that the last Costanoan group living a traditional existence virtually disappeared by the mid-1830s. A second period of extreme disruption of the Costanoan way of life occurred during the secularization of the Missions by the Mexican government. At that time most Indians left the Missions to work as laborers on the ranchos that were established in the surrounding areas. Some multiethnic Indian communities were established, but by the late 1800s those communities were all but gone as old people died and younger people moved away.

Archaeological sites tend to be located in the Islais Creek, Mission Creek and South Basin area on the original east coast shore and adjacent to the fresh water lagoons and marshes along the north coast shore of the San Francisco Peninsula.

#### Historic 1770 - Present

San Francisco was the dominant western city in the 19th and early 20th centuries. That dominance can be illustrated from a number of perspectives: population, economics, and social and cultural status. In 1880 San Francisco was (by population) the ninth ranked city in the United States, the only one of the nation's top fifty cities located in the western one-third of the country. As a population center, San Francisco remained the dominant city in the west until after 1919. By 1920, Los Angeles had surpassed San Francisco in numbers of people. San Francisco was not only a mammoth city for its time, it was a city with a heterogeneous population.

Another way to indicate San Francisco's central role as the 19th-century metropolis of the West is in economic terms. In 1880, for example, San Francisco handled 99 percent of all merchandise imported into the three Pacific states, 83 percent of all exports, and produced 60 percent of all goods manufactured in this region. The rail lines, together with the well developed harbor and shipping lines, made the City the focal point of western transportation, extending across the Pacific to China and Japan. San Francisco was also the financial center of the West, the corporate and banking headquarters, and the location of the U.S. Mint and Pacific Stock Exchange.

Viewed in terms of these prime characteristics, four basic eras in the City's history emerge:

1. The Spanish-Mexican Period, 1776-1846. A modest village is established and undergoes a very slow development towards a commercial/transportation center. On the eve of Marshall's discovery of gold, the village of San Francisco has a population of less than 1000.

#### China Basin

During the Spanish-Mexican era, this area lying between the small settlements of the village of Yerba Buena (later San Francisco) and Mission San Francisco de Assisi was isolated and had no known inhabitants.

#### South Beach/Rincon Hill, Ferry Building and Piers 9-35

The cove lying between Rincon Point and Broadway was the site of Yerba Buena Cove, one of the best anchorages in San Francisco Bay. Even before the Gold Rush, ships used the cove to anchor. Recognizing the Cove's importance, the U.S. Army established a government reserve and stationed a battery of 32-pound cannons near Rincon Point in 1846.

2. The Gold Rush, 1848-1860. The City explodes under the impact of the massive influx of miners, and the commercial opportunities they present. An "instant city" is created. The hundreds of millions of dollars worth of gold mined during this era creates prosperity in San Francisco and the beginnings of maritime industries.

#### China Basin

The shipbuilding and dry dock/ship repair industry, was centered on Steamboat Point, a piece of land which extended a short way into the Mission bay section of San Francisco. No such facility existed in San Francisco before 1851, when Henry B. Tichenor constructed the "San Francisco Dry Dock," a marine railway near the present day corner of Second and Townsend Streets. Tichenor's operation could "take up" vessels of up to 700 tons.

#### Ferry Building to Piers 9-35

During the March 1847 to March 1848 period, eighty-six ships had arrived, and the City was growing, although slowly. This was nothing compared to the flood of 1849. Yerba Buena Cove became littered with ships of all types; 526 vessels were reported in the Bay as a whole in June 1850, most of them in the Cove. These vessels were often abandoned by a crew intent upon gaining their fortune in the mines. Since lumber and carpenters were also scarce, instead of constructing a building many entrepreneurs purchased a ship (often cheaply) and turned it into a warehouse, hotel, saloon, store or restaurant. These were either tied up on a wharf or beached. The large number of such ships is indicated by the fact that there were at least one hundred and sixty-four "storeships" in San Francisco in July 1852.

The area around the deepest point of the Cove, between Market Street and Broadway up to Montgomery Street, became the central part of town and grew most rapidly. As the gold



from the Sierra foothills poured into the City and as the goods came in from world-wide sources, private and municipal port improvements were rapidly made. They consisted at first of a series of wharves and piers projecting well out into the water. Buildings were built on the piers and the Bay periodically filled in around them, making necessary the building of a new or longer pier. Remains of about forty storehouses are thought to lie under San Francisco streets and buildings, the majority of them in or near the project corridor.

Later, in the 1860s, ship repair facilities were established in the North Point area (near Kearny and Bay Streets). Called Merchant's Dry Dock and Shipyard, they were expanded in the 1870s. This dock was relocated to the South Waterfront in 1879.

The most important concentration of early day warehouses was found in the central section of this segment. The first ones were built as early as 1851 out of masonry and stone; later ones were typically made of brick. Many of these warehouses survived the 1906 earthquake and fire, yet were later demolished to make way for "redevelopment." In 1969, destruction of the old North Point warehouse, at the western corner of Sansome and Lombard Streets, which dated to the mid-1850s, was the catalyst for preservation efforts. By 1976 these efforts had resulted in San Francisco's Landmarks Preservation Advisory Board adopting a resolution of intent to designate the area bounded by Broadway, Lombard Street, The Embarcadero, and the base of Telegraph Hill as an historic district.

3. The Empire City of the West, 1860-1920. San Francisco is the City of the West, the power center from which western development is directed. Manufacturing on the City's fringes

becomes an important, although a subordinate feature to the City's own development, which focuses on commercial, financial, real estate and transportation ventures, which includes the Belt Line Railway.

After an investigation into the newly constructed Central Pacific Railroad, the State decided to take over the Port of San Francisco, a municipal authority established in 1846. The State Harbor Commission was formed in 1863. The speculative purchasing of underwater city lots, rendered cost of port improvements so artificially high, that the State determined it owned the Bay bottom and would participate in operating San Francisco's port in a way which would serve the economic development of all San Franciscans and the State. Plans began for a new seawall behind which the State would own the land. All cargo arrived by ship and was handled on the waterfront by horsecar or steamcar, but that was soon to change.

After completion of the transcontinental railroad in 1869, the Central Pacific, controlled by the Big Four, acquired the Southern Pacific Railroad. Sixty percent of the freight previously arriving by ship now came by railroad to Oakland and a considerable revenue shortfall occurred. Seawall plans were delayed. In response to the effect of the new rail service, the Harbor Commission envisioned the merger of maritime shipping and the railroads: a belt railroad line would be built on the land formed behind the seawall to facilitate transfer of goods to and from the ships and the Commission's railroad.

In 1877, work on the seawall resumed and in 1889, a law was passed authorizing construction of the Belt Line Railway by the Harbor Commission. Immediately the belt line railcar ferry slip was constructed at Lombard Street. Until then, all private railroads had used the Central Pacific rail car

ferry dock which had been constructed in 1868. The railroad company ferries transported imports from San Francisco to the railhead in Oakland, and to the railcar ferries and yards located in bayside communities.

A period of active building followed the 1906 quake. Reconstruction of the Belt Line began before the 1909 Harbor Improvement Act was passed. A major portion of the rebuilding of the City was completed by 1910. In 1913, another Harbor Improvement Act was passed and the northern and southern sections of the Belt Line were joined past the Ferry Building.

In addition to track, "a reinforced concrete Engine House containing five stalls was erected on Seawall Lot 8, bounded by Lombard and Sansome Streets and the Embarcadero."

#### China Basin

During most of the Empire Period of San Francisco history, the China Basin segment was a thriving manufacturing, storage and transportation center, which also had the usual associated service industries, such as saloons and stores. The City dump and Dumpville, an associated shanty town, also existed here from the 1870s until at least 1895.

The economic boom of the 1860s was engendered by the discovery of silver and the development of Comstock mines in Nevada. The availability of capital in the hands of entrepreneurs encouraged the development of manufacturing. Since the Steamboat Point area was on the southern fringe of the City and already was being used for shipbuilding, it was a natural focal point for industrial development. By 1864 the foot the Third Street (today around the corner of Third and King Streets) was the terminus of the Omnibus Railway and also the approximate site of Farr's Hotel. Dwellings, shops and saloons dotted the general area. The most

important industrial establishments in the region during the 1860s and 1870s were the Citizens Gas Company (later called San Francisco Gas Light Company), the San Francisco Glass Works (later San Francisco and Pacific Glass) and the Pacific Oil and Lead Works.

The 1870s was largely a decade of depression nationwide, and in San Francisco. The Bank of California -- an important financier for many manufacturing projects -- temporarily failed and closed its doors in 1875. By contrast, the late 1870s and early 1880s saw an explosion of industrial, commercial and related activities in the China Basin segment as San Francisco moved toward the peak of its prosperity and power as the Empire City of the West.

South Beach/Rincon Hill, Ferry Building and Piers 9-35

As the waterfront built up during the 1860s and 1870s the number of wharves expanded so greatly that by 1877 there were wharves on almost every single block from King and Second Streets on the southern border to Bay and Montgomery Streets near North Point. As was true for the Gold Rush Era, during the entire Empire Period, warehouses were concentrated in the central section of the Piers 9-35 Segment, with another concentration in the South Beach/Rincon segment. A number of smaller manufacturers, about which little is known in most cases, dotted the waterfront area in these three segments.

Two maritime industries operating in this northern segment included the Merchants Dry Dock, originally located near Kearny and Bay Streets and the original "Fisherman's Wharf". The original "fisherman's wharf" of San Francisco was located at the foot of Vallejo Street at its intersection with Front Street. The Santa Fe Railroad took over this location in 1899 to establish a ferry slip.

A large amount of dumping took place along the seawall in the northern project area during the 1880s as indicated by the fact that over 5,000 artifacts -- including a sizable component of Chinese artifacts -- were found during the late 1970s construction of the North Point Plant of the San Francisco Cleanwater Program.

Various kinds of manufacturing or processing plants entered the project area during the 1890s to the First World War period. The most prominent of these includes Otis Elevator Company and California Fruit Company.

4. The Loss of Regional Dominance, 1920-Present. San Francisco remains an important city, but is no longer the dominant western metropolis. Power is spread more widely among a number of urban centers.

With the completion of the Bay Bridge in 1936 and the Golden Gate Bridge the following year, the ferry was no longer the only direct transportation from Marin and Oakland to San Francisco. Goods could be quickly trucked to San Francisco piers and warehouses.

Through World War II, the waterfront retained its image as a thriving port and center of the City's economic vitality. With the passage of time, however, the Northeastern Waterfront became increasingly separated from the rest of the City and began to decline in activity. Changes in transportation technology related to the movement of goods by water also contributed to the decline of the waterfront.

## CULTURAL RESOURCES

### 1. The Belt Line Railway

In 1889, a law was passed authorizing construction of the Belt Line Railway by the Harbor Commission. In 1913, during reconstruction after the earthquake and passage of a second Harbor Improvement Act, the northern and southern sections of the Belt Line were joined past the Ferry Building.

In addition to track a reinforced concrete Engine House containing five stalls was erected on Seawall Lot 8, bounded by Lombard and Sansome Streets and The Embarcadero. In 1914, a small plaster-covered reinforced concrete building was built in the railyard on the corner of Lombard and The Embarcadero. In January 1919, an oil tank and sand house (no longer there) were built south of the round house.

About 1979, a new 4-story concrete building was constructed of similar design to the round house. In 1984, the round house building and supply house were renovated and the supply station was named "The Sandhouse." The Round House and Supply station building were added to the National Register of Historic Places in 1985. While neither building serves its original function, both are still in their original locations and have been restored according to the Secretary of the Interior's Standards for Rehabilitation of Historic Buildings.

The Belt Line owned one locomotive before 1901. After 1945 and several replacements, there were a total of ten. During World War II, the Government did not take over the private railroads as it had in World War I. Immediately after the war, the Belt Line disposed of the remaining four steam engines. By 1960 only four diesels were used; by 1965 only three. Today only two locomotives remain in use at the Port's container terminals at Islais Creek.

The Belt Line Freight Railway extending from Fort Mason to China Basin, may be eligible for the National Register of Historic Places. It is historically significant, however it may not meet the Federal criteria for integrity. As of 1989, only 23% (from Information Concerning the Eligibility of the Belt Line Railway, June 1989) of the Belt Line track in place in 1932 remains today. Portions of the track are in poor condition. Between Harrison Street and Broadway, tracks were relocated under the Embarcadero Freeway (Route 480) between the northbound and southbound traffic lanes when the elevated freeway structure was constructed in 1957.

The Belt Line was evaluated in the 1983 I-280 Transfer Concept Program Historic Property Survey Report and Caltrans determined that it was potentially eligible for the National Register of Historic Places. The State Historic Preservation Office (SHPO) concurred with the Historic Property Survey Report. However, in 1988, it was discovered that the determination was based on incorrect and incomplete information regarding the original extent of the Belt Line, and which did not account for the fact that the trackage from Harrison to Broadway had been removed and relocated under the freeway.

The City has recently thoroughly researched both the significance (history) and integrity (current state of intactness) of the Belt Line Freight Railway and reported its findings in Information Concerning the Eligibility of the Belt Line Railway. The document concludes that the Belt Line Freight Railway has lost its integrity because the remaining trackage and setting are not characteristic of the historic theme. The State Historic Preservation Officer has reviewed these findings and has concurred that the Belt Line is not eligible for inclusion on the National Register.

## 2. Architecture

The HPSR prepared in 1983 includes an evaluation of all unlisted buildings and an inventory of all structures that might be affected by the proposed project. The HPSR and EIR also listed structures that are listed on the National Register. Others have been added since. The 1983 HPSR was reviewed by Caltrans to re-evaluate 25 buildings which are within the APE and which have become 50 years old in the last several years. Four buildings were identified by Caltrans as requiring additional professional analysis to determine their current eligibility status. An August 1990 update of the 1983 HPSR found that none of the building as eligible for the National Register of Historic Plances. A list of all potentially eligible structures within the Area of Potential Effect (APE) is included in Table 2.

Several buildings would be removed to allow widening of King Street and relocation of The Embarcadero along Steuart Street. None of the buildings are eligible for the National Register per the 1983 HPSR, the 1990 HPSR update, or currently San Francisco Landmarks.

As part of the current roadway environmental studies for buildings in the APE, the City has determined the effect of the project on all buildings on or eligible for the National Register, and on all buildings which are San Francisco Landmarks. The potential for impacts are evaluated in Section V of this report.



TABLE 2

ELIGIBLE PROPERTIES WITHIN THE APE

<u>CULTURAL RESOURCE</u>	<u>STATUS</u>
Third Street Bridge	DE
Castle Brothers Warehouse	DE
Harron, Rickard & McCone Building	N
Southern Pacific Warehouse	DE
Rincon Point/South Beach Historic District (South End Historic District)	PE
Ship Lydia	NR
Oriental Warehouse	DE
San Francisco/Oakland Bay Bridge	DE
Hills Brothers Warehouse	NR
Hathaway's Warehouse	PE
Seaman's Institute	PE
YMCA	DE
Embarcadero Hotel	PE
Audiffred Building	NR
Rincon Annex	NR
Agricultural Building	NR
Ferry Building	NR
Northeast Waterfront Historic District	PE
Belt Line Railway Roundhouse and Sandhouse	NR
Piers 1, 3, and 5 Bulkhead Buildings	PE
Old Sea Wall	DE
New Sea Wall	DE

NR-On the National Register N-Nominated for the National Register DE-Determined Eligible PE-Potentially Eligible

In addition one or more buried Gold Rush ships may be located within the APE. The existence and exact location of these ships is unknown at the present time. Possible ships located within the APE include the Rome (Roma), Elizabeth, Othello, and the Galen. In addition, other, unknown buried ship hulks may be located within the APE.

The State Historic Preservation Officer has determined that the Embarcadero Surface Roadway Project will have no effect on any of these historic properties (Appendix C).

Several buildings outside the APE were evaluated at the request of the S.F. Landmarks Preservation Advisory Board using the same criteria of effect. These buildings are the:

- Langermand Building
- Hooper's South End Warehouse
- Cape Horn Warehouse
- Farnsworth & Ruggles
- Folger's Coffee Company
- Fuller Building
- Cudahy Packing
- Gibb-Sanborn Warehouse (2)
- Cowell Cement Building
- United Seed

In addition, the Landmarks Preservation Advisory Board believes that the APE should include all piers from North Point Street to Berry Street, that the City's historic district boundaries should be used, and all buildings therein be evaluated for potential project effects.

### **3. Archaeology**

An August 1990 Historic Resource Evaluation Report (HRER) (Archeological Archival Investigation) has identified potential subsurface historic resources that may exist within the project's zone of excavation. These are summarized below. The archaeology report, included in Appendix K, delineates discrete areas of archaeological sensitivity, considers the level of disturbance due to past projects, and determines at what depth storm sewer excavation for the proposed project could further disturb those resources. Potentially significant, intact resources have been

identified but their location is uncertain. Also uncertain is whether information can be derived from these resources. These are mapped in (Figure 12).

The study has documented evidence of the existence of significant, or potentially significant Gold Rush cultural resources from within the APE, summarized as follows:

1) The bow and stern sections of the hulk of the 1840 whaler Lydia are known to exist along the line of King Street, approximately 100-150 feet west of The Embarcadero. The Lydia was placed on the National Register of Historic Places in 1981.

2) Archival sources suggest that one or more Gold Rush hulks may be located near the intersection of Steuart and Folsom Streets, within, or immediately adjacent to the APE. These ship hulks, if they exist, may be eligible for the National Register of Historic Places depending on their condition and specific historic references.

3) Archival sources suggest the possible existence of the Gold Rush hulks Rome , Galen, and Othello in the vicinity of The Embarcadero, between Folsom and Market Streets. These ship hulks, if they exist, may be eligible for the National Register of Historic Places depending on their condition and specific historic references.

4) Gold Rush resources associated with the shipbuilding industry in the Steamboat Point area may exist along the line of King Street, between Third and Fourth Streets. The 1990 HRER has concluded that these resources lack sufficient integrity to qualify for the National Register of Historic Places.

5) Portions of the "N-5" Chinese dump site may still exist and may extend into The Embarcadero in the vicinity of North Point Street. The 1990 HRER has concluded that this resources lacks sufficient ingegrity to qualify for the National Register of Historic Places.

6) Remnants of "Dumpville" may be encountered along King Street between Fifth and Sixth Streets. These cultural resources date from the City Expansion Period (1860-1920). The 1990 HRER has concluded that this resources lacks sufficient ingegrity to qualify for the National Register of Historic Places.

7) The Old Sea Wall which follows a series of 90-degree angles from Powell and Jefferson Streets south to China Basin. It defines the inland side of current Port jurisdiction. It was determined eligible for the National Register of Historic Places in 1988.

8) The New Sea Wall which extends along the eastern side of the Embarcadero was determined eligible for the National Register of Historic Places in 1978.



**AREAS OF POTENTIALLY SIGNIFICANT RESOURCES**

SOURCE: ARCHEO-TEC DRAFT ARCHAEOLOGICAL ARCHIVAL REPORT, JULY 1989

SCALE: NTS

FIGURE 12



### C. RELOCATION OF BUSINESSES

No residences are within the project area. There are eighteen existing businesses and structures within the proposed realignment of the roadway, including five outdoor advertising signs. Seventeen of the eighteen displacements (Table 3) are businesses located on sites leased from the San Francisco Port Commission, Caltrans or the Santa Fe Pacific Realty Company. All of these Port rentals are month-to month tenancies with a 30-day cancellation clause. The Caltrans rentals are similar, but with a 90-day clause. The Santa Fe Pacific and Terminals Equipment Company properties are the only privately owned parcels located within the path of the proposed project.

### D. VISUAL QUALITY

The Embarcadero surface roadway parallels the water's edge. In this densely built part of the City visual access to the waterfront is as important as physical access. Some streets offer open views to the Bay while the elevated freeway, bridge and high-rise buildings allow views of the waterfront from above.

Other elements of the built environment obstruct views of the Bay. Large pier bulkhead buildings separate the roadway from the waterfront as does the elevated Embarcadero Freeway (Route 480). Surface parking lots under the elevated freeway, parking along the roadway, and parking on piers contribute to the visual obstruction.

Preserving and promoting visual access to the Bay, the Ferry Building and the Waterfront Promenade is a goal of this project. No on-street parking is proposed within view corridors or in front of pier bulkhead buildings.

TABLE 3

## BUSINESS DISPLACEMENTS

<u>Business Unit #</u>	<u>Address</u>	<u>Owner</u>	<u>Occupant</u>	<u>Use</u>	<u>Rental Area (In Sq. Ft.)</u>	<u>Zoning</u>	<u>Ht. &amp; Bulk District</u>	<u>Remarks</u>
1.	Howard St. between Stewart & Embarcadero	See Remarks	CIC International	Public Parking	25,507	P	65-X	Port = 11,000 s.f. Caltrans = 14,507 s.f.
2.	240 The Embarcadero	Port	Vacant	Storage Yard	13,400	P	65-X	
3.	240 "	"	Terminal Equipment Co.	Employee Parking	5,500	P	65-X	
4.	289 Stewart St.	Terminal Eqpt. Co.	Owner	Marine Terminal	31,500	C-3-S	65-X	Shop/Warehouse = 23,856 s.f. Office = 9,986 s.f.
5.	Block 3743 "	Port	Hills Bros. Coffee	Employee Parking	23,600	M-1	84-E	
6.	750 The Embarcadero	"	San Francisco Mini Storage	Mini-storage and Truck Rental	45,100	M-2	40-X	There are 2 separate parcels divided by the Belt Line Railroad.
7.	770 "	"	Tower Associates	Warehouse	7,000	M-2	40-X	
8.	780 "	"	The South Beach Harbor Light	Restaurant	1,800	M-2	40-X	
9.	800 - 2nd Street	Caltrans	Delancey Street Foundation	Warehouse	25,712	M-2	40-X	
10.	125 King Street	"	McKenzie & Budnick	"	5,273	"	"	Used as photo studio
11.	135 "	"	W.E. Reed	"	12,770	"	"	
12.	141 "	"	Vacant	"	5,722	"	"	Needs repair/fire damage
13.	145 "	"	R.E.X.	"	8,647	"	"	
14.	151, 161, 171 King St.	"	One Pass, Inc.	"	21,250	"	"	Portion used as sound studio
15.	175 King Street	"	Caltrans	"	4,469	"	"	
16.	S.E. corner 3rd & King	"	City Parking	Public Parking	34,400	"	"	
17.	Block 3795 Santa Fe Pacific	Santa Fe Pacific	All Right Parking	Public Parking	70,000	M-2	40-X	Total Blk is 198,000 s.f.
18.	Block 35	Port	G.L. Burger	Car Wash/Serv.Sta.	32,000	C-2	40-X	



**E. HAZARDOUS WASTE**

In compliance with the Caltrans/FHWA requirements, the City has contracted with Bechtel, Inc. to conduct sampling and testing in the project area. The analyses of soils will be conducted according to the specifications of the Environmental Protection Agency, the California Department of Health Services, the State Water Resources Control Board, and the San Francisco Bay Regional Water Quality Control Board.

Bechtel's subconsultant, Geo/Resource Consultants, Inc. has conducted a field review and records search of the areas within the designated project area to develop a site history report (Initial Site Assessment- ISA). The site history report entitled Embarcadero Roadway Urban Design Project - Hazardous Waste Investigation - Site History Report dated August 11, 1989 contains a detailed description of past and present land uses going back several decades and a list of suspected hazardous substances used or produced associated with those land uses. The ISA indicates several areas of known soil and groundwater contamination, several areas of probable contamination and areas of potential contamination. A brief summary is included below.

The project right-of-way has been divided into nine segments and the areas of concern are highlighted within those segments.

- Segment 1 - North Point Street to Chestnut Street
  - Former PG&E Tank Farm
  - Existing MUNI Kirkland Bus Storage Yard
  
- Segment 2 - Chestnut Street to Broadway
  - Parker Warehouse
  
- Segment 3 - Broadway to Mission Street
  - No areas of concern identified

- Segment 4 - Mission Street to Bryant Street
  - Various coal operations
  - Leaking underground storage tanks
  - Hazardous materials spills
  - Former smelting operation
  
- Segment 5 - Harrison Street to Brannan Street
  - Coal yard operation
  - Underground storage tanks
  
- Segment 6 - Brannan Street to Second Street
  - Pacific Vegetable Oil tank farm
  - Paint operations
  - Coal yard operations
  - Underground storage tanks
  
- Segment 7 - Second Street to Third Street
  - Underground storage tanks
  - PG&E coal gasification operations
  - Oil and paint operations
  - Chemical warehouse
  - Oil and lead works
  
- Segment 8 - Third Street to Fourth Street and
- Segment 9 - Fourth Street to Sixth Street
  - No areas of concern identified

The City is now in the process of sampling and testing to further define the potential hazardous waste problem. The City has requested approval to proceed with this EA prior to the completion of sampling and testing. In a letter dated November 8, 1989, Caltrans approved this request on the basis that test results and discussion of any mitigation will be included in the environmental document before completion of the environmental process. The request was approved because the only major excavation in the project, other than the shallow excavation for

roadbed construction, will be for surface drainage discharge pipes and inlets, and because the cost for any remedial action for construction and placement of drainage pipes would be similar for any of the alternatives. It will also be necessary to conduct soils analyses complying with Article 20 of the San Francisco Public Works Code before construction commences.

#### **F. EXISTING TRAFFIC AND CIRCULATION**

##### Roadway

The Embarcadero provides access to Fisherman's Wharf, the waterfront, regional highways, downtown and the South of Market area. It is currently five lanes between Bay and Sansome, five lanes between Broadway and Howard and four lanes elsewhere. The posted speed limit is 30 miles per hour (mph), except north of Broadway where the posted speed is 35 mph. King Street does not extend east of Second Street. From Fourth to Second Street, King has rail embedded in asphalt and has no lane markings. The street is used for access to warehouse businesses. Between Fifth and Sixth Streets, it has a cobblestone surface and is used for parking. Presently, The Embarcadero has traffic signals at five locations within the project limits. Unsignalized side streets are under stop sign control and there are all-way stop signs at two intersections. Lane markings, diagonal curbside parking, and parallel parking are not well defined and there are few designated turn lanes. On-street parking interferes with traffic flow especially in the curb lanes.

The Embarcadero Roadway Traffic Study prepared by DKS Associates (June 1989) describes The Embarcadero as an integral element in the circulation plan for northeastern San Francisco. This study was conducted before the October 17, 1989, Loma Prieta earthquake which resulted in the closure of the Embarcadero Freeway (SR-480) as well as the Terminal Separation leading from the San Francisco/Oakland Bay Bridge to the Embarcadero Freeway. As a

result of these closures, traffic conditions have changed. Traffic information presented here represent pre-earthquake volumes.

Traffic volumes on The Embarcadero currently range from 20,000 to 40,000 vehicles per day on weekdays. The highest traffic volumes occur at the northern end of the roadway and near the Ferry Building. Weekend traffic volumes are typically 30 to 40 percent less, except in the area approaching Fisherman's Wharf where they remain roughly the same. Peak periods occur between 4-6 pm on weekdays and 3-5 pm on weekends. The morning peak direction is toward downtown and the evening peak direction is away from downtown.

Automobiles represent 94 percent of the vehicles using the roadway and trucks 3 percent. The traffic flows freely on The Embarcadero throughout the day with some back-ups at the high use areas mentioned above. Between Howard and Broadway, traffic turning volumes to and from the downtown can reach 200 to 400 vehicles per hour (vph). These turning movements reduce capacity available to through-moving traffic. At Bay and Battery Streets, the turning traffic volumes are even higher reaching 500 to 1500 vph during the peak periods. The high level of right-turning traffic from Bay Street onto The Embarcadero, from The Embarcadero onto Battery Street, and from Sansome onto The Embarcadero would conflict directly with streetcar operations unless the F-Line Streetcar is in the median. Table 4 shows existing right- and left-turn volumes at the intersections with the highest turning volumes.

Existing levels of service (LOS) at intersections along The Embarcadero are typically "C" and "D". Definitions of Levels of Service are included in Table 5.

The Belt Line Railway is a rail freight line with tracks located within the Embarcadero roadway. Its purpose is to serve shipping piers with shipborne cargoes. However, the tracks have not been used for revenue service in five years. In a letter dated October 2, 1989, the Executive Director of the Port of San Francisco states that he has "requested that Port staff re-evaluate whether or not to maintain the Belt Line north of China Basin."

**TABLE 4**

**TURNING TRAFFIC COMPARISON  
1988 PEAK HOUR VOLUMES**

	THE EMBARCADERO		CROSS STREET	
	Northbound Left	Southbound Right	Left	Right
<b>BAY STREET</b>				
Existing AM	518	0	0	1628
Existing PM	1343	28	0	714
<b>BROADWAY</b>				
Existing AM	284	26	38	275
Existing PM	325	31	103	299
<b>BROADWAY/SR 480 RAMPS</b>				
		Eastbound		Westbound
Existing AM		1134		349
Existing PM		712		1435

**TABLE 5**Level of Service Definitions

Level of Service	Stopped Delay per vehicle (sec)	Description
A	$\leq 5.0$	Describes operations with very low delay, i.e., less than 5.0 sec per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	5.1 to 15.0	Describes operations with delay in the range of 5.1 to 15.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	15.1 to 25.0	Describes operations with delay in the range of 15.1 to 25.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level, although many still pass through the intersection without stopping.
D	25.1 to 40.0	Describes operations with delay in the range of 25.1 to 40.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	40.1 to 60.0	Describes operations with delay in the range of 40.1 to 60.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	$> 60.0$	Describes operations with delay in excess of 60.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Source: *Highway Capacity Manual, Transportation Research Board, Washington D.C. 1985*

### Parking

A Parking Study for the Embarcadero Roadway project was completed by the Department of City Planning in May 1989. The study focused on the available parking (1431 spaces) that exists within and adjacent to The Embarcadero or in the path of the proposed roadway realignment. There are approximately 1266 "official" parking spaces (on-street and off-street) in the project corridor. Approximately 425 of these spaces are located under the Embarcadero Freeway between the northbound and southbound roadway lanes. Currently, there are 165 "unofficial" spaces in the area where the Belt Line tracks used to exist. In addition to the 1266 spaces, there are 79 parking spaces located in front of the Ferry Building.

Existing parking demand within the project area is high and is expected to increase. This is based on the high percentage of occupancy and the low rate of turnover per parking space. Table 6 indicates the weekday and weekend use of on-street parking. The removal of parking is called for in several plans governing this area to create space for improved transit.

### Transit

Transit services on The Embarcadero are provided by the San Francisco Municipal Railway (MUNI). Bay Area Rapid Transit (BART), Golden Gate Transit and Ferries, Red and White/Blue and Gold Ferries, public and private coach service at the Transbay Terminal, and Caltrain also interact with this transit corridor along its periphery. Approximately ten percent of the people presently traveling on The Embarcadero use transit. This percentage of use is considered moderate by MUNI.

### Pedestrian

Pedestrian access across the 80-foot wide roadway portion of The Embarcadero is indirect and against unsignalized traffic with the current roadway configuration. Pedestrian users include joggers,

**TABLE 6**

**ON-STREET PARKING CHARACTERISTICS**  
 Typical Weekday and Saturday: 10 AM - 3 PM

<u>SUBAREA</u>	<u>W E E K D A Y</u>			<u>S A T U R D A Y</u>		
	<u>OCCUP.</u> (%)	<u>AVERAGE</u> <u>DURATION</u> (Hours)	<u>TURNOVER</u> (Veh/Spc)	<u>OCCUP.</u> (%)	<u>AVERAGE</u> <u>DURATION</u> (Hours)	<u>TURNOVER</u> (Veh/Spc)
Financial Dist. Calif./Spear 30-Min. Meters	95.9	1.8	2.7	78.6	2.6	1.5
Golden Gateway Jackson/Wash. 1-Hour Meters	97.6	2.1	2.3	100.0	2.9	1.7
South of Market Howard/Folsom 1-Hour Meters	94.5	2.5	1.9	67.6	2.7	1.2
Embarcadero Ferry Bldg./ Pier 5 2-Hour Meters	94.7	2.5	1.9	51.4	2.0	1.3
Ice House Battery-Union Unrestricted	94.2	3.1	1.5	82.3	2.9	1.4
South Beach Harrison/Bryant Unrestricted	90.3	3.3	1.4	25.0	3.0	0.4
<b>TOTAL</b>	<b>94.2</b>	<b>2.5</b>	<b>1.8</b>	<b>63.4</b>	<b>2.7</b>	<b>1.2</b>

**PERCENT IGNORING TIME LIMIT\***  
 Weekday

Financial District	67.0%
Ice House	54.1
Embarcadero	51.9
South of Market	51.3
South Beach	51.1
Golden Gateway	45.0

\*"Ignoring" time limit is defined as parking for two or more hours in a 30 minute time limit zone and for three or more hours in a one hour or two hour time limit zone.



commuters and casual strollers. Within the project limits there are presently a total of 21 marked pedestrian crossings. Of these only five are signalized crossings. One of the signalized crossings is just for pedestrians. Another five of the unsignalized pedestrian crossings are stop sign controlled.

Sidewalks are continuous on the bayside of the roadway, but are discontinuous on the landside. Heaviest pedestrian activity occurs at the Ferry Building and at the northern end of The Embarcadero near Pier 39. During peak periods between 35 and 55 pedestrians per minute flow across the 55-foot wide Market Street crossing between Justin Herman Plaza and the Ferry Building. This results in a pedestrian flow rate (level of service) of less than 1.0 pedestrians per minute per foot of width, which can be described as "unimpeded" (Table 7).

#### Bicycle

Only .5 percent of all vehicles on The Embarcadero are bicycles. Currently bicycle travel on The Embarcadero is not separated from the main travel way and bicyclists routes primarily follow the existing roadway. Poor road conditions and several railroad spurs crossing the roadway further impede bicycle travel. Bicycle route marking is currently not provided.

#### Relevant Plans and Policies - Transportation

The Transportation Element and the Northeastern Waterfront Plan of the City's Master Plan have several relevant objectives and policies relating to circulation.

Roadway. An objective of the plan is to improve The Embarcadero corridor in order to facilitate the movement of people and goods, enhance public access to and along the water, and to reduce the blighting influence of the elevated freeway. Policies to implement these objectives include rerouting the roadway inland to Steuart Street,

**TABLE 7**

**PEDESTRIAN LEVELS OF SERVICE**

<u>Description</u>	<u>Flow Rate</u> (persons/minute/foot of sidewalk width)
Open	Less than 0.5
Unimpeded	0.5 - 2
Impeded	2 - 6
Constrained	6 -10
Crowded	10 -14
Congested	14+

Source: Ferry Building Complex Final Environmental Impact Report, 1983.

connecting The Embarcadero and King Street, and widening sidewalks to create plazas and promenades. Specific policies regarding road improvement include providing two lanes in each direction with right- and left-turn channelization, and providing an exclusive right-of-way for transit service.

The plan also states that to the extent feasible, the City should accommodate regional traffic movement inland from the northeastern waterfront area. The plan prohibits any increase to the capacity of the roadway system along the shoreline.

Parking. The plan also sets forth policies related to parking. A policy of the Plan is to limit additional parking in the project area and minimize the impact of this parking, discourage long term parking for trips which could be accommodated by transit and to locate parking away from areas of intense pedestrian activity. The plan also prohibits parking over water (on the piers) except for public access and commercial recreation uses. It calls for removing or relocating inland those existing parking facilities on or near the water's edge. The determination of the amount of parking allowed for permitted uses would be based on the desirability of reducing automobiles along the waterfront.

Transit. The plan encourages the improvement of transit service as the primary mode of travel in this corridor to reduce automobile traffic. Specifically, the plans call for establishing a transit line between the South of Market area and the Fisherman's Wharf area which would primarily make use of existing railroad tracks. The Embarcadero is designated as a transit preferential street.

Bicycles. The Recreational Element of the Bikeways Plan calls for a Class I bicycle route (off-road) along the Embarcadero roadway connecting to class III routes (signs only) to the north and south. The Northeastern Waterfront Plan includes a policy to develop a continuous bicycle path along the northeastern waterfront, separated and protected from vehicular traffic where possible, and linked with the city-wide bicycle route system.

Pedestrian. The plan encourages facilitating pedestrian access to the shoreline, including access for the handicapped, through the provision of convenient safe pedestrian crossings along The Embarcadero. The Northeastern Waterfront Plan specifically addresses providing signalized pedestrian crossings, integrated with transit stops at Pacific, Market, Mission, Folsom, Bryant, Brannan, Townsend, Second, and Fourth streets. Traffic signals and speed limits should give priority to pedestrian movement across the Embarcadero roadway.

Total Design Plan for Piers 7 through 24 calls for the elimination of parking under the Embarcadero Freeway and along the Embarcadero roadway. Beyond this, it calls for the elimination of long-term parking and parking over water, generated by downtown offices, that could be accommodated by public transit. Much of the parking within the project area is to be removed to improve views, shoreline appearance, and public access to the Bay.

## G. AIR QUALITY

The project site is located in the nine-county San Francisco Bay air basin which is designated by the California Air Resources Board as a non-attainment area for ozone (O<sub>3</sub>) and carbon monoxide (CO). These two chemicals are the major pollutants associated with motor vehicles. The primary source of particulates in San Francisco are vehicle travel over paved roads and demolition and construction activities. A non-attainment area is one where federal ambient air quality standards have been violated within the past 2 to 3 years.

The permanent CO monitoring station for San Francisco is located at 10 Arkansas Street. Comparison of air quality data from the San Francisco monitoring stations with those from other Bay Area Air Quality Management District (BAAQMD) monitoring stations indicate that San Francisco's air quality is among the least degraded of all the developed portions of the Bay Area. San Francisco contributes to regional air quality problems, including ozone, which affect other parts of the Bay Area. Ozone is not emitted directly from sources, but is produced in the atmosphere over time and distance through a complex series of photochemical reactions involving hydrocarbon (HC) and nitrogen oxide (NO<sub>x</sub>) emissions, which are carried downwind as photochemical reaction occurs.

There have been three CO "hotspot" monitoring programs in San Francisco. One of these programs occurred during the winter of 1980 and was located at Washington and Battery Streets. Others were downtown and South of Market Street. The results of the monitoring programs showed that locations in San Francisco near streets with high traffic volumes and congested flows may experience violations of the 8-hour CO standards under adverse meteorological conditions.

The Air Quality Study performed for the project shows that at present, there are no violations of either the one-hour or the eight-hour average CO standards estimated at any of the intersections near the project site. Table 7 illustrates the data collected at the four most congested intersections in the project corridor. Currently, the highest CO levels are 7.0 ppm for the eight-hour 1988 estimate (the State standard is 9.0) and 10.0 ppm for the one-hour 1988 estimate (the State standard is 20.0) at the Embarcadero and Washington Street intersection. There are not sufficiently high traffic volumes to cause violations of CO standards. CO levels are expected to decline in the future, largely because technological advances that make car engines burn fuel more efficiently and reductions due to the Vehicle Inspection and Maintenance (I/M) program. CO reductions are predicted to outpace increases in traffic at these intersections, and violations of the CO standards are not predicted. In 2015, the highest CO levels are predicted to be 6.2 ppm for the 8-hour and 8.9 ppm for the one-hour concentration times, still below the state standard.

Emission of particulates would result from construction and from vehicle trips generated by the project and cumulative development. Increased particulate concentrations, if not mitigated, could increase the frequency of violations of State particulate standards in San Francisco, with concomitant health effects and reduced visibility.

Emissions of sulfur oxides (SO<sub>x</sub>) generated by the project and by cumulative development would not bring San Francisco's sulfur dioxide (SO<sub>2</sub>) concentrations measurably closer to violating the standard.

The 1982 Bay Area Air Quality Plan, prepared by the Association of Bay Area Governments, BAAQMD, and the Metropolitan Transportation Commission, contains strategies aimed at attaining the Federal ozone and CO standards. The strategies consist

**TABLE 8**  
**EMBARCADERO ROADWAY PROJECT**  
**CO CONCENTRATIONS AT SELECTED INTERSECTIONS**

1988

INTERSECTION	4-6 p.m. Traffic <sup>1</sup>	Avg. Speed	Emission Factor	Emissions in grams	% of Brannan & 6th	8-hr Local	8-hr Total	1-hr Total
Embarcadero/Bay	6950	15	33.84	235188	37.5%	1.1	6.9	9.9
Embarcadero/Mission	6920	15	33.84	234173	37.3%	1.1	6.9	9.9
Embarcadero/Washington	7275	15	33.84	246186	39.2%	1.2	7.0	10.0
Embarcadero/Broadway	6083	15	33.84	205849	32.8%	1.0	6.8	9.7

2015 - Current Roadway Configuration

INTERSECTION	4-6 p.m. Traffic <sup>1</sup>	Avg. Speed	Emission Factor	Emissions in grams	% of Brannan & 6th	8-hr Local	8-hr Total	1-hr Total
Embarcadero/Bay	9101	15	24.21	220311	53.3%	1.1	6.1	8.7
Embarcadero/Mission	9057	15	24.21	219270	53.0%	1.1	6.1	8.7
Embarcadero/Washington	9527	15	24.21	230649	55.8%	1.1	6.1	8.7
Embarcadero/Broadway	7960	15	24.21	192712	46.6%	0.9	5.9	8.4

2015 - Proposed Roadway Configuration

INTERSECTION	4-6 p.m. Traffic <sup>1</sup>	Avg. Speed	Emission Factor	Emissions in grams	% of Brannan & 6th	8-hr Local	8-hr Total	1-hr Total
Embarcadero/Bay	9101	15	24.21	220311	53.3%	1.1	6.1	8.7
Embarcadero/Mission	9489	15	24.21	229729	55.6%	1.1	6.1	8.7
Embarcadero/Washington	10032	15	24.21	242875	58.7%	1.2	6.2	8.9
Embarcadero/Broadway	7960	15	24.21	192712	46.6%	0.9	5.9	8.4

NOTES:

<sup>1</sup> One hour traffic counts for 1988 and one hour traffic estimates for the year 2015 are contained in the project's traffic study titled "Embarcadero Roadway Transportation Study".

primarily of HC and CO emission controls on stationary sources and motor vehicles, and transportation improvements. Emissions associated with this project and with cumulative development in San Francisco are not projected to increase ozone concentrations, and thus would not conflict with the objectives of the 1982 Bay Area Air Quality Plan regarding ozone. Based on the above, cumulative development in the project area would not conflict with objectives of the 1982 Bay Area Air Quality Plan regarding CO.

The federal standards were not met by the end of 1987 as required by the Clean Air Act, nor by the extended date of August 1988. New plans with additional pollution control measures will have to be implemented to meet both the federal standards and the new California Clean Air Act (AB2595 Sher) effective January 1, 1989. Further reductions in motor vehicle pollutants could be required.

This project is in an area which has transportation control measures in the State Implementation Plan (SIP), a document approved by the Environmental Protection Agency (EPA) on December 14, 1982. The EPA has subsequently issued a call for SIP revisions as announced in the Federal Register on September 7, 1988 (53 FR 34500). The Federal Highway Administration (FHWA) has determined that both the Transportation Plan and the Transportation Improvement Program conform to the SIP. This project is included in the Transportation Improvement Program for the Metropolitan Transportation Commission. Therefore, pursuant to 23 CFR 770, this project conforms to the SIP.

#### **H. NOISE LEVELS**

Noise intensity is customarily measured on a "decibel" scale which serves as an index of loudness. Table 9 identifies typical noise levels in decibels under various conditions. Noise level estimates in this document are all based on the " $L_{eq}$ ", the time



**TABLE 9**

**Noise Abatement Criteria**  
**Hourly A-Weighted Sound Level - decibels (dBA) 1/**

<u>Activity Category</u>	<u>Leq(h)</u>	<u>L10(h)</u>	<u>Description of Activity Category</u>
A	57 (Exterior)	60 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	70 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	75 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	--	Undeveloped lands.
E	52 (Interior)	55 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

1/Either L10(h) or Leq(h) (but not both) may be used on a project.

average of the energy content of environmental noise. The  $L_{eq}$  is consistent with Federal Highway Administration (FHWA) regulations and US Environmental Protection Agency (EPA) recommendations.

The Environmental Protection Element of the City's Master Plan sets forth policies regarding transportation noise within the City. The Plan focuses attention on three aspects of the problem: the source of the noise, the path it travels, and the receiver of the noise.

The EPA and Title 25 of the California Administrative Code state that the time-averaged interior noise levels averaged with the 10-decibel nighttime penalty should not exceed 45 decibels within a residential structure. The FHWA has mandated a maximum exterior  $L_{eq}$  noise level of 67 dBA and an interior noise level of 52 dBA in residential areas.

Existing ambient noise in the Embarcadero corridor is dominated by transportation-related noise. As stated in the I-280 TCP EIR, the noisiest hours typically coincide with the morning and evening peak traffic hours. In the South of Market and King Street area, the sensitive receptors are residents and recreational users. The closest residents to the roadway, the Delancey Street Development bounded by the triangle between Brannan, First and The Embarcadero, are 15 feet away. Buildings were designed so that interior noise levels would not exceed 45 dBA. Outdoor noise levels in this area fall into a range of 60 to 75 dBA.

Noise levels and receptors are similar north of Market Street but exterior noise levels increase in the Fisherman's Wharf area range from 75 to 85 dBA. Trucks and buses are primarily responsible for creating these high levels.

## I. HYDROLOGY AND WATER QUALITY

Prior to extensive land filling beginning in the 1800s, most of The Embarcadero Corridor was part of San Francisco Bay. The original shoreline formed typical cusp-shaped embayments or coves between rocky headlands. The Embarcadero corridor is almost entirely covered by impervious surfaces (asphalt, concrete and/or structures). It is relatively flat because it is on man-made land. Currently and as it has for several decades, storm water runoff from The Embarcadero roadway has sheet-drained into the Bay. Other adjacent area runoff from streets, structures and landscaped areas has been controlled and is directed into the San Francisco combined storm/sewer system. Because the City has a combined sanitary sewer and storm drain system, one to three times per year during severe storms, the bacterial content of nearshore waters rises as a result of overflows.

The San Francisco Clean Water Program has been planning and constructing sewage collection and treatment facilities throughout the City for the past fifteen years pursuant to an overall Wastewater Master Plan which was adopted in 1974. The goal is to eliminate sewer overflows occurring during storms. Part of the system is a large box sewer located under the existing Embarcadero roadway.

Groundwater elevation along the Corridor is near mean sea level. Near these portions of the seawall which are rubble fill and relatively permeable, the groundwater level exhibits minor tidal fluctuations. The groundwater along the Corridor is almost entirely brackish to saline.

Water quality objectives or standards have been established by the Regional Water Quality Control Board (RWQCB) for the waters of San Francisco Bay. These objectives describe the level of water quality which should exist to protect and enhance the defined beneficial uses.






## J. TOPOGRAPHY, GEOLOGY, SOILS AND SEISMICITY

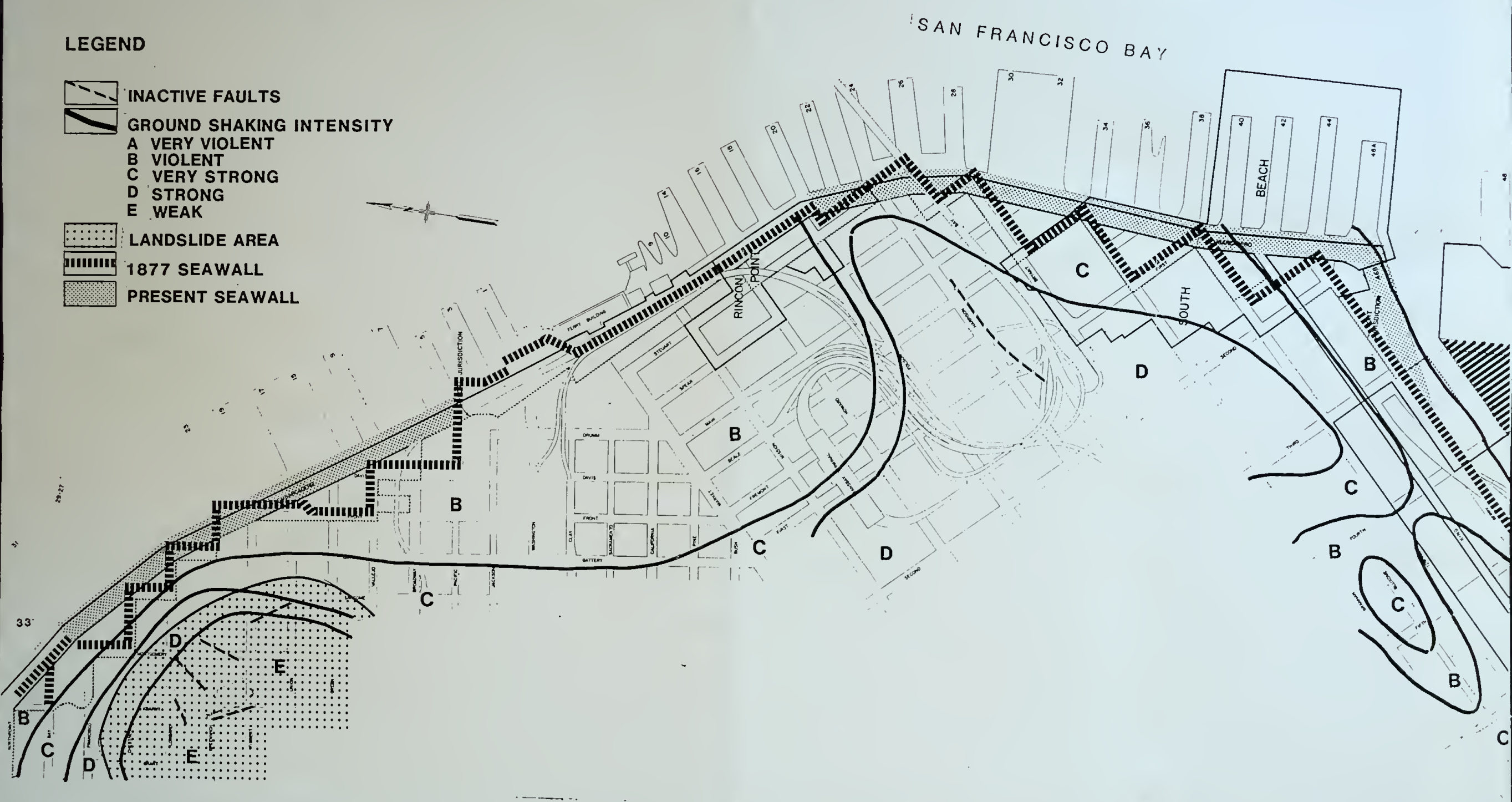
The project is in an urbanized area. The Embarcadero Corridor has been used as a street and railway since before 1910. The roadway is about ten feet above mean sea level (msl) in the China Basin segment. It rises to about 15 feet above msl through the South Beach/Rincon Hill segment and drops to about 8 feet above msl through the Ferry Building area, Piers 9-35 and Fisherman's Wharf segments.

The entire Embarcadero corridor lies on artificial fill. Artificial fill was dumped along the north and east tidal flats of San Francisco to provide flat land as early as 1850. The amount of fill used along most of the Corridor varied between 10 and 30 feet with fill depths to about 50 feet in the Piers 9-35 segment. Fill material consisted of dune sand, rubbish, quarry wash, building debris and timber from various sources. Most of the corridor was filled following the construction of a seawall along the waterfront in the late 1800s. The China Basin segment was not completely filled until the 1920s. The present seawall underlies the seaward edge of the Embarcadero roadway.

No known active faults cross the Embarcadero corridor and it is remote from areas of steep slopes susceptible to rockfalls and landslides. Inactive faults occur on Rincon Hill and Telegraph Hill. There are four major fault zones in the San Francisco Bay area capable of causing violent ground motion along the corridor. The San Andreas and Seal Cove Faults are located off the Pacific shore 10 miles and 15 miles, respectively, from the project area. The Hayward and Calaveras Faults are 10 and 20 miles east of the site, respectively. Each of these systems as shown in Figure 13 is considered active and is capable of generating a major earthquake (greater than magnitude 7 on the Richter scale) during the projected useful lifetime of any structure along the Embarcadero Corridor (at least 50 years).

**LEGEND**

-  INACTIVE FAULTS
-  GROUND SHAKING INTENSITY
  - A VERY VIOLENT
  - B VIOLENT
  - C VERY STRONG
  - D STRONG
  - E WEAK
-  LANDSLIDE AREA
-  1877 SEAWALL
-  PRESENT SEAWALL



**GEOLOGIC HAZARDS - SEISMIC**

SOURCE: I-280 TRANSFER CONCEPT PROGRAM EIR

SCALE: NTS

FIGURE 13



Much of the Corridor is in an area of potential liquefaction, subsidence and inundation hazard (Figure 14). As a result of the October 17, 1989 earthquake (Richter magnitude 7.1), subsidence of four to nine inches occurred along the corridor. No evidence of liquefaction is present. Violent groundshaking during a great earthquake (Richter magnitude 8+) can cause liquefaction and settlement of loose soils. Liquefaction occurs where soils are saturated, unconfined, of approximately the same grain size, and uncompacted or loose. The top layers of soil under the Embarcadero were compacted during construction of the seawall. Some geologists theorize that the loose layer of sandy silt called Bay Mud could behave differently from the compacted soils above. They believe the discontinuity could cause an amplification of seismic shaking. Usually associated with offshore earthquakes, tsunamis (great sea waves) can produce very rapidly rising tides along the San Francisco coast. These high water levels could extend into the San Francisco Bay.




#### **K. BIOLOGICAL RESOURCES**

The project is in an area which has been extensively modified by human actions. It does not provide habitat for any rare, threatened or endangered species of plants or animals. There have been no sightings of rare, threatened or endangered species in the project area.





**LEGEND**

-  POTENTIAL LIQUEFACTION AND SUBSIDENCE
-  POTENTIAL 200 YEAR TSUNAMI INUNDATION
-  PREDICTED RUNUP LEVELS IN FEET ABOVE MEAN SEA LEVEL FOR 100 YEAR AND 500 YEAR TSUNAMI

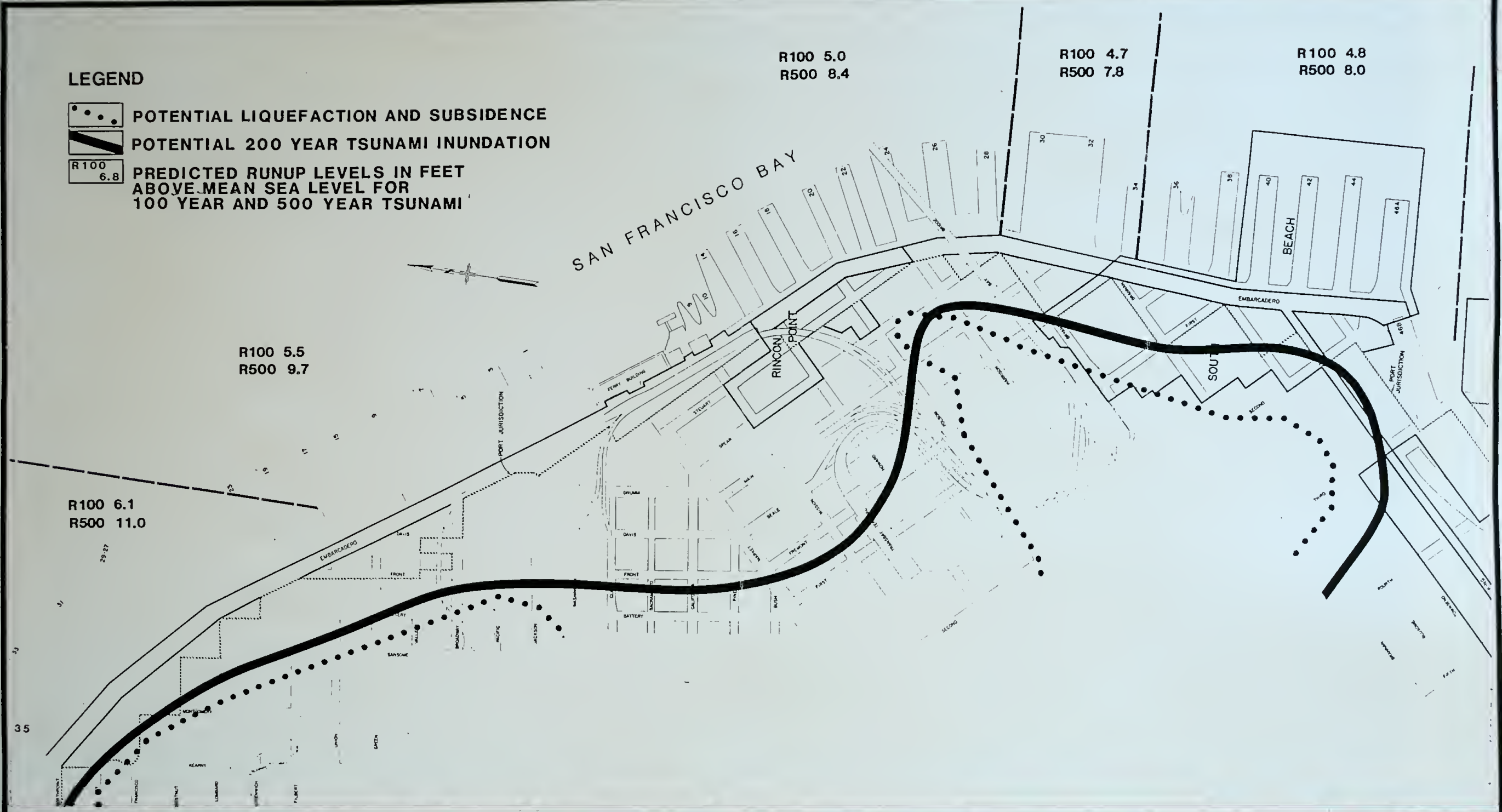
R100 5.0  
R500 8.4

R100 4.7  
R500 7.8

R100 4.8  
R500 8.0

R100 5.5  
R500 9.7

R100 6.1  
R500 11.0



**GEOLOGIC HAZARDS**

SCALE: NTS

SOURCE: I-280 TRANSFER CONCEPT PROGRAM EIR

FIGURE 14



ENVIRONMENTAL SIGNIFICANCE CHECKLIST

	Yes or <u>No</u>	If yes, is it signifi- cant? No, <u>Yes, or *</u>
<b><u>PHYSICAL. Will the proposal either directly or indirectly:</u></b>		
1. Change the topography or ground surface relief features?	<u>No</u>	<u>*</u>
2. Destroy, cover, or modify any unique geologic or physical features?	<u>No</u>	<u>---</u>
3. Result in unstable earth surfaces or exposure of people or property to geologic hazards?	<u>No</u>	<u>+</u>
4. Result in or be affected by soil erosion or siltation (whether by water or wind)?	<u>No</u>	<u>---</u>
5. Result in the increased use of fuel or energy in large amounts or in a wasteful manner?	<u>No</u>	<u>*</u>
6. Result in an increase in the rate of use of any natural resource?	<u>No</u>	<u>---</u>
7. Result in the substantial depletion of any nonrenewable natural resource?	<u>No</u>	<u>---</u>
8. Violate any published Federal, State, or local standards pertaining to solid waste or litter control?	<u>No</u>	<u>---</u>
9. Modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	<u>No</u>	<u>---</u>
10. Encroach upon a floodplain or result in or be affected by floodwaters or tidal waves?	<u>No</u>	<u>---</u>
11. Adversely affect the quantity or quality of surface water, ground water, or public water supply?	<u>No</u>	<u>*</u>
12. Result in the use of water in large amounts or in a wasteful manner?	<u>No</u>	<u>---</u>
13. Affect wetlands or riparian vegetation?	<u>No</u>	<u>---</u>

\*See following section: Discussion of Environmental Evaluation and Mitigation Measures.

	<u>Yes or No</u>	<u>If yes, is it signifi- cant? No, Yes, or *</u>
<u>PHYSICAL. Will the proposal either directly or indirectly: (cont.)</u>		
14. Violate or be inconsistent with Federal, State, or local water quality standards?	<u>No</u>	—
15. Result in changes in air movement, moisture, or temperature, or any climatic conditions?	<u>No</u>	—
16. Result in an increase in air pollutant emissions, adverse effects on or deterioration of ambient air quality?	<u>No</u>	*
17. Result in the creation of objectionable odors?	<u>No</u>	—
18. Violate or be inconsistent with Federal, State, or local air standards or control plans?	<u>No</u>	*
19. Result in an increase in noise levels or vibration for adjoining areas?	<u>Yes</u>	<u>No, *</u>
20. Violate or be inconsistent with Federal design noise levels or State or local noise standards?	<u>Yes</u>	*
21. Produce new light, glare, or shadows?	<u>Yes</u>	<u>No, *</u>

BIOLOGICAL. Will the proposal result in (either directly or indirectly):

22. Change in the diversity of species or number of any species of plants (including trees, shrubs, grass, microflora, and aquatic plants)?	<u>No</u>	—
23. Reduction of the numbers of or encroachment upon the critical habitat of any unique, rare or endangered species or plants?	<u>No</u>	—
24. Introduction of new species of plants into an area, or result in a barrier to the normal replenishment of existing species?	<u>No</u>	—
25. Reduction in acreage of any agricultural crop or commercial timber stand?	<u>No</u>	—
26. Removal or deterioration of existing fish or wildlife habitat?	<u>No</u>	—

\*See following section: Discussion of Environmental Evaluation and Mitigation Measures.

If yes, is  
 Yes or    it signifi-  
No      cant? No,  
                  Yes, or \*

BIOLOGICAL. Will the proposal result in (either directly or indirectly):  
 (cont.)

- |  |           |   |
|--|-----------|---|
| 27. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)? | <u>No</u> | — |
| 28. Reduction of the numbers of or encroachment upon the critical habitat of any unique, rare or endangered species of animals?  | <u>No</u> | — |
| 29. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?   | <u>No</u> | — |

SOCIAL AND ECONOMIC. Will the proposal directly or indirectly:

- |   |            |               |
|---|------------|---------------|
| 30. Cause disruption of orderly planned development?  | <u>No</u>  | —             |
| 31. Be inconsistent with any elements of adopted community plans, policies, or goals, the Governor's Urban Strategy or the President's National Urban Policy (if NEPA project)? | <u>Yes</u> | <u>No</u>     |
| 32. Affect the location, distribution, density, or growth rate of the human population of an area?  | <u>No</u>  | *             |
| 33. Affect life-styles, or neighborhood character or stability?   | <u>Yes</u> | *             |
| 34. Affect minority or other specific interest groups?  | <u>No</u>  | —             |
| 35. Divide or disrupt an established community?   | <u>No</u>  | —             |
| 36. Affect existing housing, require the displacement of people or create a demand for additional housing?  | <u>No</u>  | —             |
| 37. Affect employment, industry or commerce, or require the displacement of businesses or farms?  | <u>Yes</u> | <u>No</u> , * |
| 38. Affect property values or the local tax base?   | <u>Yes</u> | *             |

\*See following section: Discussion of Environmental Evaluation and Mitigation Measures.

	Yes or <u>No</u>	If yes, is it signifi- cant? No, Yes, or *
<u>SOCIAL AND ECONOMIC. Will the proposal directly or indirectly:</u> (cont.)		
39. Affect any community facilities (including medical, educational, scientific, recreational, or religious institutions, ceremonial sites or sacred shrines)?	<u>Yes</u>	<u>No</u>
40. Affect public utilities, or police, fire, emergency or other public services?	<u>No</u>	—
41. Have substantial impact on existing transportation systems or alter present patterns of circulation or movement of people and/or goods?	<u>Yes</u>	*
42. Affect vehicular movements or generate additional traffic?	<u>Yes</u>	*
43. Affect or be affected by existing parking facilities or result in demand for new parking?	<u>Yes</u>	<u>No,*</u>
44. Involve a substantial risk of an explosion or the release of hazardous substances in the event of an accident or upset conditions?	<u>No</u>	—
45. Result in alterations to waterborne, rail or air traffic?	<u>Yes</u>	*
46. Affect public health, expose people to potential health hazards, or create a real or potential health hazard?	<u>No</u>	—
47. Affect any significant archaeological or historic site, structure, object or building?	<u>Yes</u>	*
48. Affect natural landmarks or man-made resources?	<u>No</u>	—
49. Affect any scenic resources or result in the obstruction of any scenic vista or view open to the public, or creation of an aesthetically offensive site open to public view?	<u>No</u>	—
50. Result in substantial impacts associated with construction activities (e.g., noise, dust, temporary drainage, traffic detours and temporary access, etc.)?	<u>Yes</u>	*

\*See following section: Discussion of Environmental Evaluation and Mitigation Measures.

	If yes, is it signifi- cant? No, Yes, or *
<u>Yes or</u>	
<u>No</u>	

MANDATORY FINDINGS OF SIGNIFICANCE.

- |  |                 |
|--|-----------------|
| 51. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?                          | <u>No</u> _____ |
| 52. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)  | <u>No</u> _____ |
| 53. Does the project have environmental effects which are individually limited, but cumulatively considerable? Cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. It includes the effects of other projects which interact with this project and, together, are considerable. | <u>No</u> _____ |
| 54. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?   | <u>No</u> _____ |

\*See following section: Discussion of Environmental Evaluation and Mitigation Measures.





## **VI. DISCUSSION OF POTENTIAL IMPACTS AND MITIGATION**

The discussion of potential environmental impacts associated with the proposed project is based upon the detailed Environmental Significance Checklist which is included in the preceding section of this report. All questions that were checked "Yes" or marked with "\*" are discussed below.

### **A. IMPACTS TO TOPOGRAPHY OR GEOLOGIC HAZARD (Checklist Numbers 1 and 3)**

**Impact:** The proposed project will have insignificant effects on topography or ground surface relief features in the project area because it requires minimum excavation and filling. It will, in fact, even out surface features in both pedestrian and roadway areas which experienced settlement after the earthquake of October 17, 1989.

**Mitigation:** Reconstruction of the Embarcadero surface roadway would require minimal foundation work accounting for post-earthquake settlement. Additional differential settlement could occur slowly in the future where the alignment passes over hard spots caused by structures which are supported on piles. Examples are the large box sewer, the Embarcadero Freeway column footings and the foundations of the pier bulkhead buildings. Design precautions would eliminate any adverse impacts.

### **B. IMPACTS TO FUEL OR ENERGY (Checklist Number 5)**

**Impact:** Transportation activities consume more than a fifth of San Francisco's total energy. Personal auto use accounts for more than half of total transportation energy used locally, and more than half of this total is for commuting to and from work.

Much of the energy use associated with the proposed roadway project would be generated by fuel for vehicles. But the project would not, in itself, generate any new vehicular trips as it does not increase the capacity of the roadway. It could result in some changes in the routes taken by some vehicles traveling between the districts bordering the project area. Vehicles would be more likely to use the route of the proposed project if it shortened the length of the trip, which is not expected. With the exception of circuitous routing for some trucking approaches, no substantial amount of additional fuel would be used by vehicles using the route.

An insignificant amount of electricity would be consumed by the proposed roadway traffic signals and lighting. Electricity consumption for roadway lighting occurs during off-peak times for generation.

The related F-Line and Muni Metro Extension projects will consume an estimated 2000 kilowatts of electricity. The current local demand is 12,000 kilowatts, while the overall generating capacity is 270 megawatts. Energy for these projects will be provided by the electric substations operated by the San Francisco Public Utilities Commission. Electrical power is supplied by hydroelectric facilities at the Hetch-Hetchy project located in the foothills of the Sierra Nevada. The Downtown substation located on Stevenson Street, will supply power for the Muni Metro Turnaround project. The F-Line Streetcar, a low demand line, will most likely be supplied by the Downtown substation or Station J located in the Financial District. The Muni Metro Extension will require a new substation probably located in the vicinity of Second and King Street (center of the revenue and non-revenue track to be constructed in the next ten year).

Under normal operating conditions, approximately 2900 vehicles per hour travel on The Embarcadero in both directions during the peak period. The vehicle distribution is approximately: 94% auto, 3% trucks, 2% buses, 1% other. With the proposed project, transit use is expected to increase by the year 2000. Traffic will be redistributed as follows: 66% auto, 3% trucks, 30% transit, 1% other, resulting in energy savings. With or without the project, using historical data relating to land use projections, traffic levels are expected to increase 31% by the year 2015. The estimate for 2015 reflects the limited capacity and increasing congestion on The Embarcadero, reducing its attraction as a vehicular route.

**Mitigation:** There is no measurable increase in the use of fuel or energy, therefore, no mitigation is required since there are no significant impacts.

#### **C. IMPACTS TO WATER QUALITY (Checklist Number 11)**

**Impact:** Storm water runoff currently drains across the roadway into the Bay. The project includes a new storm drain system of laterals and mains under the Embarcadero roadway which will feed into the large existing combination box sewers which were installed under parts of The Embarcadero within the last fifteen years. The box sewer is a storage and transport box with a capacity of 45.8 million gallons. The increased flow from the roadway would be an insignificant increase to the total flow, and would not increase the number of incidents of overflow.

Catch basins will drain both the roadway and the Muni transitways. They will be spaced every 150 to 200 feet along the roadway. All new pipe will be sized to accommodate the flows. The collection and the subsequent treatment of the runoff is in

conformance with the existing Clean Water Act and the goals of the City to comply with the policies of the Regional Water Quality Control Board.

**Mitigation:** The installation of the drainage system would provide beneficial impacts to the water quality in the Bay by collecting and treating stormwater from the proposed roadway. There are no adverse impacts to be mitigated.

**D. LIGHT AND GLARE (Checklist Number 21)**

**Impact:** The street lighting proposed for The Embarcadero would function effectively without dominating the other vertical elements along the waterfront. The light standards are proposed to be similar in appearance and color to those currently on The Embarcadero. The light standards would also be used as supports for catenary wire for transit. The lights would be located at regular intervals, avoiding street trees, to provide continuity and avoid areas of shadow.

The light levels would be sufficient for pedestrians, but would also be compatible with vehicular lighting. Roadway illumination levels would have an average range of 1.0 to 2.0 foot-candles, while pedestrian and transit-waiting area levels would be a minimum of 1.0 foot-candles.

**Mitigation:** Glare would be minimized through the use of diffusers and refractors. There are no significant impacts posed by the proposed lighting for the project, therefore mitigation is not required.

**E. CONSISTENCY WITH RELEVANT PLANS AND POLICIES (Checklist Number 31)**

**Impact:** The Embarcadero Surface Roadway Reconstruction Project is consistent with the plans and policies of the City and County of San Francisco and the Bay Conservation and Development Commission.

Before amended, the BCDC Total Design Plan called for the removal of all of the 1,266 exposed parking spaces located along The Embarcadero roadway and under the Embarcadero Freeway to improve views, shoreline appearance, and public access to the Bay. The proposed reconstruction would retain 479 of these spaces and an additional 133 spaces would be available during off-peak hours . The Total Design Plan and the Northeastern Waterfront Plan have been amended to reflect the current proposal.

Before amended, policies in the Northeastern Waterfront Plan included providing an exclusive right-of way for transit service within the roadway cross-section as a means for improving the Embarcadero roadway.

The project would improve bicycle access without providing a combined pedestrian/bicycle path. Combined pedestrian/bicycle paths are now being discouraged by most public entities. The San Francisco Bicycle Technical Advisory Committee, a citizen group, prefers accommodating bicyclists in the street to providing a separate path or lane. The reasons for their preference includes efficient access and the need for well-maintained and clean riding surfaces.

**Mitigation:** Approximately 612 of the 1266 on-street and off-street parking spaces will be retained either full-time or off-peak, the proposal complies with the policies in the amended Plans. That is, parking used solely for commuters will be virtually eliminated. Parking provided will serve Port users

(bar and Bay pilots, ship repair workers, customers, etc), Port tenants and recreational trips. The City and County is currently investigating the potential for inland replacement parking that would be a separately funded project.

A bicycle route with adequate space in the roadway is being provided. It is believed this is the most appropriate facility for bicyclists in terms of relative pedestrian, bicycle and vehicle speeds.

The City and County Master Plan was revised in March 1990 to be consistent with the project consensus developed over the last two years. The BCDC Total Design Plan amendments were adopted by BCDC commission on August 16, 1990.

**F. SOCIOECONOMIC IMPACTS (Checklist Numbers 32, 33, 37, 38, 39, and 40)**

**Impact:**

Land Use The proposed Embarcadero surface roadway reconstruction would not change the mix of land uses that already exists adjacent to it. The already high density residential and commercial office uses would not be adversely affected by the change in character of the roadway. Maritime activities will be affected to some degree by less direct access.

Relocation There are 18 businesses affected by the roadway realignment, 17 of which are located on lands leased from the Port, Caltrans or Santa Fe Pacific Realty Company, that will be relocated within the City and County of San Francisco. Five of these are parking lots, three public parking and two employee parking. Another two are unoccupied facilities in poor condition. A small restaurant and mini-storage operation will require priority in all phases of the right-of-way program, as will the only business located on a privately-owned site,

Terminal Equipment Company, Inc. Some of the displacements currently paying below-market rates may find increased rates at new locations.

Economic The proposed project will not measurably affect the property values or the local tax base of those businesses remaining along The Embarcadero. Some property values will decrease, while others may increase. The Port states that the project may decrease their rental income and other revenue potential due to decreased access to piers and adjacent development sites. On the other hand, the San Francisco Department of Real Estate has researched the effect of light rail projects on adjacent land values throughout the country. Based on their research, they conservatively estimate a ten percent increase in land value as a result of the roadway and transit projects.

Most of the reduced access will occur primarily during the construction period which is temporary in nature. Businesses that might be affected by temporary loss of access would be those located in the piers. Other businesses on the west side of the roadway can be accessed from alternate downtown streets. Even during construction, two lanes, one in each direction, are expected to be passable. Construction of the frontage in any one particular area is expected to take three to six weeks. After the construction period, most of the businesses on The Embarcadero will have convenient access. Access to some piers on the east side of the roadway may require U-turns or slightly more circuitous routes.

The reconstruction of The Embarcadero as a parkway will enhance and increase the availability of public recreational facilities at the waterfront through the addition of signalized pedestrian crosswalks, a waterfront promenade, sidewalks, bicycle

facilities. The aesthetic enhancements not only will attract more people, but will make available improvement sites more attractive to private investment.

The reduction in available parking should not adversely affect the life styles or neighborhood character of adjacent areas because there will be a great increase in transit service within the Embarcadero corridor. The new transit facilities would conveniently connect with other transportation downtown, in the Fishermans Wharf area, in the South of Market area, and in the proposed Mission Bay development.

Public Services Relative to public services, the fire station located at Pier 22 will have the ability to pre-empt traffic signals on The Embarcadero, in both the northbound and southbound directions in an emergency. This method of signal control will not affect response times after project construction. During project construction, emergency vehicle access will be maintained and response times should be only minimally affected.

**Mitigation:** Relocation will be disruptive but not an adverse impact. All relocated businesses will be provided with advisory assistance to find suitable alternate locations. The City and County, with Federal Aid, will pay eligible businesses the actual cost of moving the business to a new location. An acquisition stage survey will be conducted and a relocation plan developed. All relocation procedures will be carried out in conformance with the Federal Uniform Relocation and Real Property Acquisition Act of 1989.

The Port will give consideration to the access and parking requirements of potential land improvements which would attract significantly large numbers of private automobiles.



**G. VEHICULAR TRAFFIC, PARKING AND OTHER CIRCULATION (Checklist Numbers 41, 42, 43, and 45)**

The following discussion is summarized from the Embarcadero Roadway Traffic Study, prepared for the San Francisco Department of Public Works (DPW) by DKS Associates, (June 1989) and from a later study prepared by the DPW Bureau of Traffic Engineering and Operations. Both of these studies were conducted prior to the October 17, 1989, Loma Prieta earthquake which resulted in the closure of the Embarcadero Freeway (SR-480) as well as the Terminal Separation which connects the San Francisco/Oakland Bay Bridge with the Embarcadero Freeway. As a result of these closures, traffic conditions have changed. Additional traffic studies will be required as part of the environmental process for replacing and/or removing the closed freeways. The following analysis is based on pre-earthquake traffic flows.

The DKS study was prepared using Transportation Research Board Circular 212 Planning Method, which is based on volume-to-capacity ratios and is useful for identifying general levels of impacts and for comparing alternatives. The Circular 212 Planning Method assumes that traffic signal timing is fixed for evaluation of intersection capacity. However, a more detailed study would require signal timing to be adjusted to achieve optimal flow of traffic, transit, and pedestrians.

The initial traffic study results indicated a need to review the operation of many intersections more closely. The DPW study used a more detailed method, the 1985 Highway Capacity Manual Design and Operations/Delay Method. This method is based on several operational parameters that provide evaluation in terms of seconds of delay at intersections. In addition the DPW study revised information in two areas: 1) additional turn lanes were added at otherwise congested intersections to improve through traffic flow, and 2) signal phases and timing were adjusted. The delay method of analysis is best suited to evaluating differences

in lane configuration and signal timing. The volume-to-capacity method (Circular 212) is better suited to evaluating alternative land use or development scenarios and general circulation schemes.

Vehicular Traffic Impact:

The proposed project does not increase the through carrying capacity of The Embarcadero for automobiles, but focuses primarily on better control over turn movements, reduction of conflicts, accommodating enhanced transit capacity (F-Line and MUNI Metro Extension) and bicycle and pedestrian access. The project provides a balanced approach to accommodate several modes of transportation, most notably transit with projections of 30,000 to 40,000 riders daily in the year 2000. The F-Line will use historic vehicles to attract ridership from automobiles and to relieve crowding on cable car trips.

The proposed traffic signals and walk signals would increase pedestrian access to the waterfront. Pedestrian crossing signals would be provided at points of demand. As a result, some of the distances between pedestrian crossings or intersections would be short. In some cases, this close spacing of signals may result in queued traffic not dissipating enough to allow adequate signal synchronization (progression) during all peak periods.

Traffic projections were made to the year 2015 to fulfill State and Federal Highway Administration (FHWA) requirements. The Embarcadero is contiguous to the downtown area and its traffic growth is caused by a complex series of factors. Future traffic was projected using 25 years of historical data for The Embarcadero which reflects a growth rate of one percent per year in peak period traffic. The rate of growth in daily traffic has been greater than the peak period percentage. But, the evening peak continues to be the time when the greatest number of cars

are on the streets. Based on the peak period growth rate, the year 2015 peak hour traffic levels are projected to be 31 percent above 1988 levels.

The capacity of connecting arterials and the surrounding street grid is limited, limiting the ability of traffic to get to and from The Embarcadero during peak hours. Projections for The Embarcadero assume a certain amount of traffic would shift to other modes of transportation or other routes, and that there would likely be a continued lengthening of the peak traffic period. Traffic shifting to other routes could cause increased congestion at the intersections of First/Harrison, Harrison/Essex, and Sterling/Bryant which are already congested during the P.M. peak.

Peak periods on The Embarcadero were determined based on traffic counts obtained by the San Francisco Department of Public Works; Bureau of Traffic Engineering and Operations, and DKS Associates. The weekday a.m. peak period occurs between 7:00 and 9:00 am, and the weekday p.m. peak period traffic (also the peak for the entire day) occurs between 4:00 and 6:00 pm. The weekend peak period occurs between 3:00 and 5:00 pm on Saturdays.

As stated above, the most recent traffic analysis, prepared by DPW traffic engineers was performed using seconds of delay calculations. This calculation procedure computes the number of seconds of delay for each direction of movement at each intersection. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average stopped delay per vehicle for a 15-min analysis period. Stopped-time delay is the time an individual vehicle spends stopped in a queue while waiting to enter an intersection. For each intersection, intersection delay is computed as the weighted average of the delays for each direction of movement. Ranges of delay at intersections can be used to rate

intersections, and can also be expressed as level of service (LOS). Definitions of levels of service are included in Table 5 on Page 86.

Table 10 shows p.m. peak period intersection LOS for four cases: Column 1 is based on 1988 traffic volumes and the existing roadway lane configuration. Column 2 is based on 1988 traffic volumes and the proposed roadway lane configuration and proposed signal timing scheme. Column 3 is based on 2015 traffic volumes and the existing lane configuration. Column 4 is based on 2015 traffic volumes and the proposed lane configuration. Columns 2, 3 and 4 assume full signalization at all intersections.

It should be noted that Column 1 shows whether intersections are signalized, have stop signs at side streets only or have all-way stop signs. For Column 1, only those intersections which are signalized were computed using the 1985 Highway Capacity Design and Operations\Delay Method. The Manual does not provide a procedure for designating a composite intersection LOS at intersections where only the side street is controlled by Stop signs (e.g., at Battery, Folsom, Harrison and Brannan). However, it does provide a procedure to calculate the LOS for each approach. This procedure is based on gap acceptance for traffic entering the intersection. At such locations along The Embarcadero, the main street (Embarcadero) approaches operate at LOS A and the cross street is typically at LOS F during the peak hour. This has been shown as A/F.

The 1985 Highway Capacity Manual does not provide a comparable procedure for analyzing all-way STOP sign controlled intersections (e.g., at North Point, Broadway, Washington, Bryant and Townsend). However, as footnoted, LOS was computed using TRB Circular 212 Planning\Delay Method.

**EMBARCADERO ROADWAY PROJECT - INTERSECTION LEVEL OF SERVICE \***

PM PEAK PERIOD

STREET NAME	1 EXISTING LANE CONFIGURATION		2 PROPOSED LANE CONFIG.		3 EXISTING LANE CONFIGURATION		4 PROPOSED LANE CONFIG.	
	Type of Stop	1988 TRAFFIC VOLUME	1988 TRAFFIC VOLUME	1988 TRAFFIC VOLUME	2015 TRAFFIC VOLUME	2015 TRAFFIC VOLUME	2015 TRAFFIC VOLUME	2015 TRAFFIC VOLUME
	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
EMBARC/NORTH POINT	4 way stop	D **		D	D		E	
EMBARC/BAY	signal	E		E	F		F	
EMBARC/SANSOME	signal	C		E	F		F	
EMBARC/BATTERY	2 way stop	A/F ***		E	E		E	
EMBARC/GREEN	closed	(closed)		D	(closed)		D +	
EMBARC/VALLEJO	2 way stop	A/F ***		(closed)	C		(closed)	
EMBARC/BROADWAY	4 way stop	D **		D +	E		F +	
EMBARC/WASHINGTON	4 way stop	C **		C +	E		F	
EMBARC/MARKET	signal	E		E	C		E	
EMBARC/MISSION	signal	C		D +	E		F	
EMBARC/HOWARD	signal	B		C +	B		B +	
EMBARC/FOLSOM	2 way stop	A/F ***		C	D		C	
EMBARC/HARRISON	2 way stop	A/E ***		C	C		C	
EMBARC/BRYANT	4 way stop	C **		C +	D		D +	
EMBARC/BRANNAN	2 way stop	A/F ***		C +	E		D +	
EMBARC/TOWNSEND	4 way stop	B **		C	D		D	
KING/2nd		(closed Northbound)		----	(closed Northbound)		----	
KING/3rd		----		----	----		E ****	
KING/4th		(closed Southbound)		----	(closed Southbound)		D ****	
KING/5th		----		----	----		D ****	
CYCLE LENGTH		Varies (40 to 60 seconds as existing)		90			120	

\* Method used is 1985 Highway Capacity Manual Design & Operations Delay Method, unless footnoted otherwise (used for all signalized intersections.)  
 \*\* Method used is Circular Planning/Delay Method; assumes no signalized pedestrian protection.  
 \*\*\* Method used is 1985 Highway Capacity Manual Gap Acceptance Method; assumes no signalized pedestrian protection.  
 \*\*\*\* From Mission Bay EIR Year 2015 forecasts (Circular 212 V/C Planning Method)  
 + Pedestrians cross to median and wait for next walk light to complete crossing.

It should be noted that a direct comparison of the LOS for unsignalized intersections in Column 1 with the LOS for other signalized intersections may be inappropriate. The methods of analysis for each are based on different assumptions and evaluation criteria.

Comparing Column 4 to Column 2, we see a decrease in level of service from 1988 to 2015 due to regional growth.

In comparing the 2015 LOS without the project, to the 2015 LOS with the project, it should be noted that although several intersections would be less congested if the project is constructed, several would be more congested. This is consistent with the traffic studies prepared for the I-280 Transfer Concept Program EIR.

Potential intersection improvements were considered, but not included due to physical constraints, adverse impacts to streetcar operations or unacceptable impacts to pedestrians. One of the improvements was that the Caltrans Highway Design Manual states that if vehicular turn volumes exceed more than 300 vehicles per hour, then a double left turn lane should be provided. Examples of constraints or adverse impacts are as follows:

1. Broadway - Although the intersection could be improved by adding a second northbound left turn lane, placement of existing freeway columns and the need for a wide waterfront sidewalk do not permit adding that lane.
2. Washington Street - To provide access from maritime piers to the regional highway system and for local access, one northbound left turn lane would be provided. Although the capacity of the intersection

has been increased, addition of this movement adds delay. Freeway columns prevent addition of a second northbound left turn lane.

3. Market Street - This is a major pedestrian crossing during peak hours. Pedestrians scurry to meet ferries. Vehicular level of service could be improved by leaving the pedestrian crossing time so that most pedestrians would need to stop at the median before crossing the rest of the lanes. However, the City and County believes that pedestrian demand and safety requires that pedestrians cross in one movement. Vehicular delays would increase significantly at this intersection.
4. Mission Street - Although vehicular level of service could be improved by adding a second northbound left turn lane, placement of freeway columns cannot properly accommodate a lane. In addition, Mission is a transit-preferential street. In order to provide efficient bus and streetcar movements, non-transit traffic is discouraged and only one westbound vehicular lane is provided between The Embarcadero and Steuart Street.

It should be noted that at most intersections, the project would result in great improvement to side street access to The Embarcadero and to Embarcadero left turning traffic. Where this is true, through traffic may be required to experience a longer delay than exists today. Table 11 indicates 2015 turn volume projections on the Embarcadero reflecting the increasing demand to serve local traffic.

**TABLE 11****TURNING TRAFFIC COMPARISON  
2015 PEAK HOUR VOLUMES**

	<b>THE EMBARCADERO</b>		<b>CROSS STREET</b>	
	<b>Northbound Left</b>	<b>Southbound Right</b>	<b>Left</b>	<b>Right</b>
<b>BAY STREET</b>				
2015 AM	678	0	0	2132
2015 PM	1759	36	0	935
<b>BROADWAY</b>				
2015 AM	372	34	49	360
2015 PM	425	40	134	391



The projected levels of service are not unusual for the highly urbanized City and County of San Francisco. Similar arterials in San Francisco operate at similar levels of service:

<u>STREET</u>	<u>Arterial LOS</u>
Van Ness Avenue between California and Fell	D
Bay Street between Filmore and Stockton	C
Broadway between Mason and Battery	D
Lombard St. between Divisadero and Van Ness	D
Mission Street between 14th and 25th Streets	C
19th Ave. between Crespi and Lincoln Way	C

Existing typical peak hour travel time on The Embarcadero between Third and Berry Streets, and North Point Street is 8 to 13 minutes. After addition of coordinated (synchronized) traffic signals, peak hour travel time between King and 5th Streets and North Point Street is estimated to be 8 minutes, indicating an improvement in travel time.

The roadway would be reconstructed with adequate turn radii to allow single-unit trucks to turn northbound into all piers. Major piers would be provided with direct signalized southbound turn access. Other piers could be accessed southbound by using U-turns a few blocks south of the desired pier. Those intersections that can accommodate U-turns by single-unit trucks, have a minimum inside radius of 42 feet.

**Vehicular Traffic Mitigation:**

Although vehicular traffic congestion may increase slightly, the project would provide benefits to side street traffic, transit and pedestrians which override the impacts to through traffic. That is, roadway reconstruction and transit projects will permit almost twice as many people per day to use The Embarcadero. The combined transit and traffic service is an improvement. Regional,

growth, development, and other traffic-inducing activities will continue at a relatively constant rate increasing traffic levels in 2015 by 31% over existing. The proposed project does not add additional through lanes to the roadway. It does however improve vehicle safety and accomplishes the goal of safely accommodating transit, pedestrians and turning vehicles. It will increase corridor capacity by allowing for over 40,000 transit riders, supporting the City's "Transit First" policy.

As a result of the DPW Traffic study, turn lanes were added and pedestrian crossing time was reduced to improve through traffic flow. All reasonable mitigation measures have been included. In Summary:

1. The roadway project allows construction of transit projects serving 30,000 to 40,000 people per day by year 2000, almost doubling the capacity in terms of total transportation users per day.
2. Traffic signals would provide transit pre-emption and control, and would provide a good level of synchronization for vehicular traffic.
3. Side street access to and from The Embarcadero would be greatly improved, and conflicts would be controlled.
4. The project would implement existing policy requiring pedestrian access across and along The Embarcadero.

The provided vehicular level of service and the cited benefits provide balanced transportation access which is a significant improvement over existing conditions. Vehicular level of service could not be further improved without impacting transit and pedestrian service or adjacent land uses. The proposed configuration would mitigate traffic impacts to provide operations consistent with City policy and with other arterial

roadways. For these reasons we believe impacts are not significant. Traffic impacts have been mitigated and no additional mitigation is proposed.

**Parking Impact:**

The Embarcadero Roadway Project Parking Study dated May 1989, prepared for this project by the Department of City Planning indicates that there are 1431 "official and "unofficial" parking spaces on or adjacent to the roadway. Currently cars are not only parked within the roadway, under the Freeway and in the seawall lots, but next to the lots in the area where the Belt Line tracks used to exist. There are approximately 165 of these "unofficial" spaces. Of the 1266 "official" spaces (790 on-street and 476 off-street), 654 (52%) parking spaces would be lost due to reconstruction of the roadway. The proposed roadway would provide approximately 479 full-time and 133 off-peak on-street spaces. So there would not be a decrease in on-street parking, but a 28 percent gain.

Other spaces which could be impacted by the proposed roadway alignment include the 79 spaces in front of the Ferry Building. BCDC has informed the City that with construction of the roadway, they expect the area in front of the Ferry building to become a pedestrian plaza, in conformance with the Total Design Plan for Piers 7 through 24.

On-street parking spaces would be provided in dispersed parallel parking bays along the roadway. Roadside parking has been considered only in areas where it will not impinge on views of the Bay, on view corridors from major streets or on pier bulkhead buildings. Very limited parking for service and handicapped access is considered on the east side of the roadway. Opportunities are severely restricted in order to protect view corridors and provide the promenade with a width of at least 25

feet to serve pedestrians. Removal of parking along the waterfront furthers BCDC and City and County policy regarding parking in this area.

Much of the current parking is used by long term commuters who work in the downtown area. The I-280 TCP EIR and the Parking Study propose locations for intercept parking to absorb the displaced commuter parking. However, FHWA, UMTA, Caltrans, and the Metropolitan Transportation Commission made a decision not to fund intercept parking from the I-280 Interstate Transfer funds. This document does not address intercept parking because it is not a part of this project scope.

The Port considers the impact of removing 654 parking spaces to be critical to Port operations. Any maritime or commercial development which the Port may propose is required under the City Master Plan to provide enough parking for its users. The Navy will not sign contracts with San Francisco ship repair firms unless adequate numbers of parking spaces are provided within a specific distance from the moored ship to be repaired. Additionally West Coast union agreements require that bar pilots and bay pilots have parking within a particular distance from the pilot boat moorages. Finally, the marketability of existing Ferry Building office leases and commercial projects is improved if parking is available within a reasonable distance.

The proposed reconstruction of The Embarcadero will reduce the total parking supply in the area. About 45 percent of the on-street spaces are considered "critical" (priority rating "A") to Port operations and the remaining 55 percent are considered "desirable" (priority rating "B") as shown in Table 12. Of the approximately 790 off-street (parking lot) spaces, about 18 percent are considered "critical" to Port operations and an additional 4 percent are "desirable" to retain for Port operations; more than 600 are identified as "revenue sources" (priority rating "C") for the Port meaning they are not directly

**TABLE 12**

**EMBARCADERO ROADWAY PARKING IMPACTS**

<u>LOCATION</u>	<u>EXISTING SPACES</u>	<u>PRIORITY RATING</u>	<u>PROPOSED SPACES</u>	<u>CHANGE</u>
<u>King Street: 6th Street to The Embarcadero</u>				
				0
<u>South Beach: King Street to Bryant Street</u>				
On-Street	144	A-144	72	-72 A-ON
<u>Rincon Point: Bryant Street to Howard Street</u>				
On-Street	171	A-85	61	-24 A-ON
		B-86	0	-86 B-ON
Off-Street	306		0	-306 C-OF
<u>Ferry Building: Howard Street to Washington Street</u>				
On-Street	212	B-212	146	-66 B-ON
Off-Street	317	A-144	0	-144 A-OF
		B- 29		-29 B-OF
		C-144		-144 C-OF
<u>Base of Telegraph Hill: Washington Street to North Point Street</u>				
On-Street	116	B-116	128*	+12*B-ON
Off-Street	165 **	C-165	0	-165 C-OF
TOTAL				
On-Street	643		407*	-236*
				(-106 A-ON)
				(-130* B-ON)
Off-Street	788		0	-788
				(-144 A-OF)
				(-29 B-OF)
				(-615 C-OF)

Priority Ratings: A = Critical. Includes South Embarcadero meters.  
 B = Desirable to maintain. Includes Central and North Embarcadero meters.  
 C = Revenue source.

Abbreviations: ON = On-street parking: meters or white, yellow or blue zones.  
 OF = Off-street parking.  
 ROW= Right-of-way.

\* Figure includes 70 proposed spaces on The Embarcadero available during off-peak periods only.

\*\* "Unofficial" parking spaces on Belt Line Freight Track area

related to Port operations; although they are considered the lowest priority category for replacement, they are an important source of needed revenue to the Port.

**Parking Mitigation:**

Because adopted BCDC/City plans require removal of all parking on The Embarcadero and improved transit and the proposed project is in conformance with this, parking loss is considered an insignificant impact. The removal of parking provides space for improved transit and furthers the City's "transit first" policy for this transit-preferential street.

Proposed parking is intended primarily for Port uses. The Port is aware of the reduction in parking availability. In a letter dated October 5, 1989, the Port approved the Urban Design Study and the roadway geometry drawings, as well as for the related transit projects, all of which reflect the removed parking. This letter is included as Appendix B.

This project does not propose to replace all existing parking. Federal and State highway funds are not available for intercept parking in the form of garages. However, the project has identified potential replacement parking sites for other City agencies to consider, outside proposed project funding. The City is currently investigating the possibility of providing replacement parking both above and below ground. Parking structures to be constructed outside of the Embarcadero right-of-way for replacement parking would be funded as a separate project.

**Transit Impact:**

Transit along The Embarcadero would be able to be substantially improved if the proposed project is constructed. Currently, only the 32 MUNI bus line services the waterfront. The F-Line and MUNI Metro extension will provide efficient rail transit service the full length of The Embarcadero. According to data collected

by DKS Associates, transit ridership is expected to increase from less than 10,000 people per day in 1988 to 30,000 to 40,000 people in the year 2000 (F-Line Streetcar - 10,000; and Muni Metro Extension - 20,000).

MUNI Metro would operate with traffic signal pre-emption from the subway portal, through The Embarcadero corridor, and along King Street. The F-Line would operate on the west side of the roadway from Mission to Battery Streets and in the median north of Battery Street on The Embarcadero. The F-Line would also operate with traffic signal pre-emption.

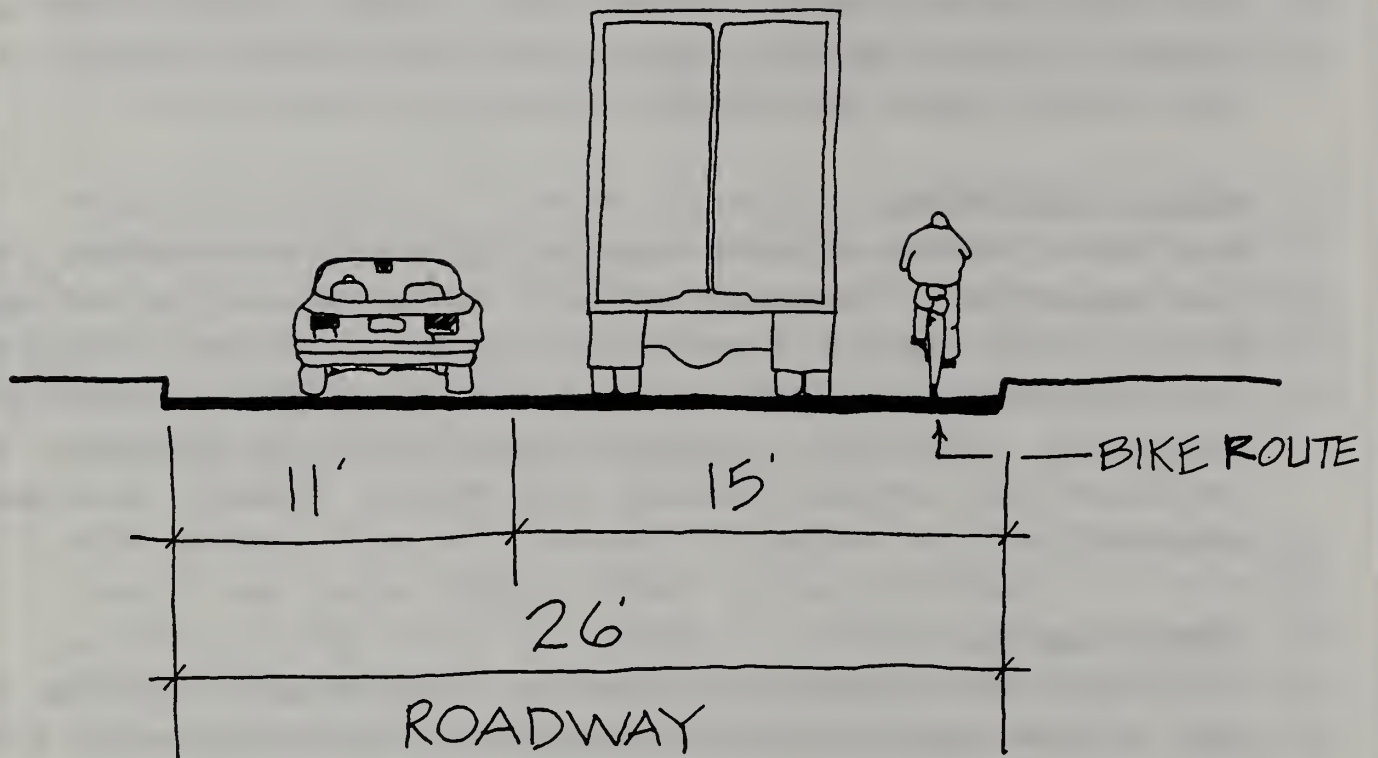
**Transit Mitigation:**

Southbound traffic would be provided with separate flashing "no turn" signs and a right turn phase of the traffic signal between Battery and Market Streets to avoid conflicts between side-running F-Line streetcars and turning vehicles. Separate southbound right-turn vehicle lanes would be provided at intersections between Battery and Market Streets wherever possible.

**Bicycle Impact:**

The Embarcadero through-lane width of the pavement would be 26 feet in each direction. The left travel lane would be 11 feet wide and the right travel lane, 15 feet wide, in order to accommodate bicyclists (Figure 15). Previous experience of the City and County and of Bay Area cycling groups led to the proposal to provide The Embarcadero with a Class III (unstriped) bicycle route even though the right lane has nearly sufficient width for a Class II (striped) facility.

The proposed bicycle route would begin at the north end of the project then proceed south on The Embarcadero to King Boulevard as shown in Figure 16. At Second Street, the route would turn south to Berry Street then west along Berry to Third Street. The route would continue on Third Street over the Third Street Bridge

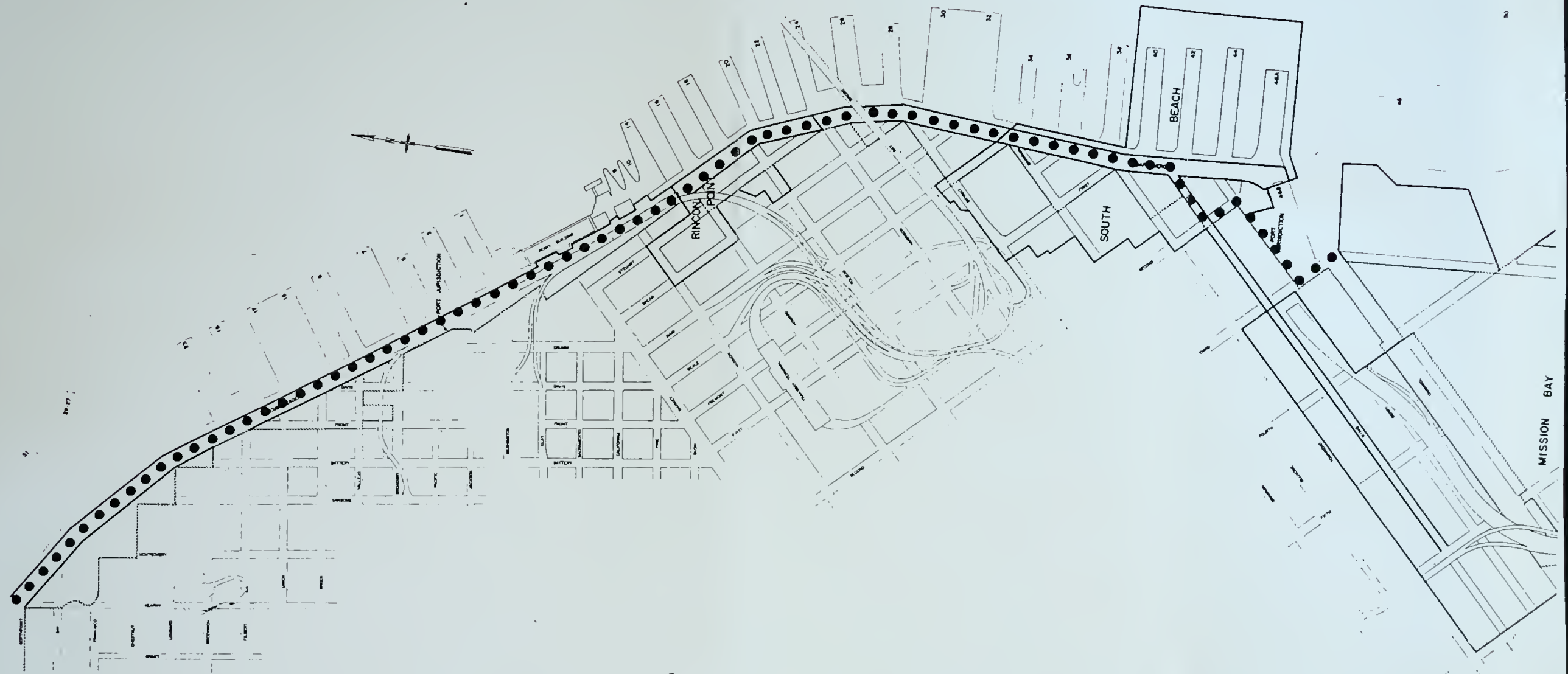


**EMBARCADERO ROADWAY  
CLASS III BIKE ROUTE**

**SOURCE:**

**FIGURE 15**





EMBARCADERO ROADWAY PROJECT  
BIKE ROUTE

SCALE NTS

FIGURE 16



where it would join southern routes. Alternatively, it may be possible for the bicycle route to leave the roadway at Townsend Street southbound, and continue through the proposed South Beach Park, emerging at Second and Berry Streets, continuing on Berry to Third Street.

The proposed route will be safer once the Belt Line rails which crisscross many areas of The Embarcadero are removed. The proposed F-Line rails would be designed to minimize hazards to cyclists. Where the F-Line crosses from the west side of the roadway to the median, the angle of crossing will be approximately 56 degrees.

Appropriate amendments will be made to the City and County Master Plan.

**Bicycle Mitigation:**

The proposed project would benefit cyclists on The Embarcadero. It provides wider travel lanes, signage, and safer rail crossings. Therefore no mitigation is required.

**Pedestrian Impact:**

The proposed installation of signals would provide enhanced pedestrian circulation and bay-front access, and allow for transit pre-emption. The plan proposes 18 traffic signals with pedestrian crossings at intersections (4 signalized intersections now, 14 unsignalized) and 13 pedestrian signals at midblock locations (1 signalized now, 12 unsignalized). It is anticipated that pedestrians would be able to cross the entire roadway in one signal change at most intersections. However, five or six of the signalized midblock crossings will only allow crossing of half the street at a time. Otherwise, the mid-block crossings can greatly decrease the level of vehicular service on the roadway, such as at Market Street (Table 11, Column 3 vs. Column 4).

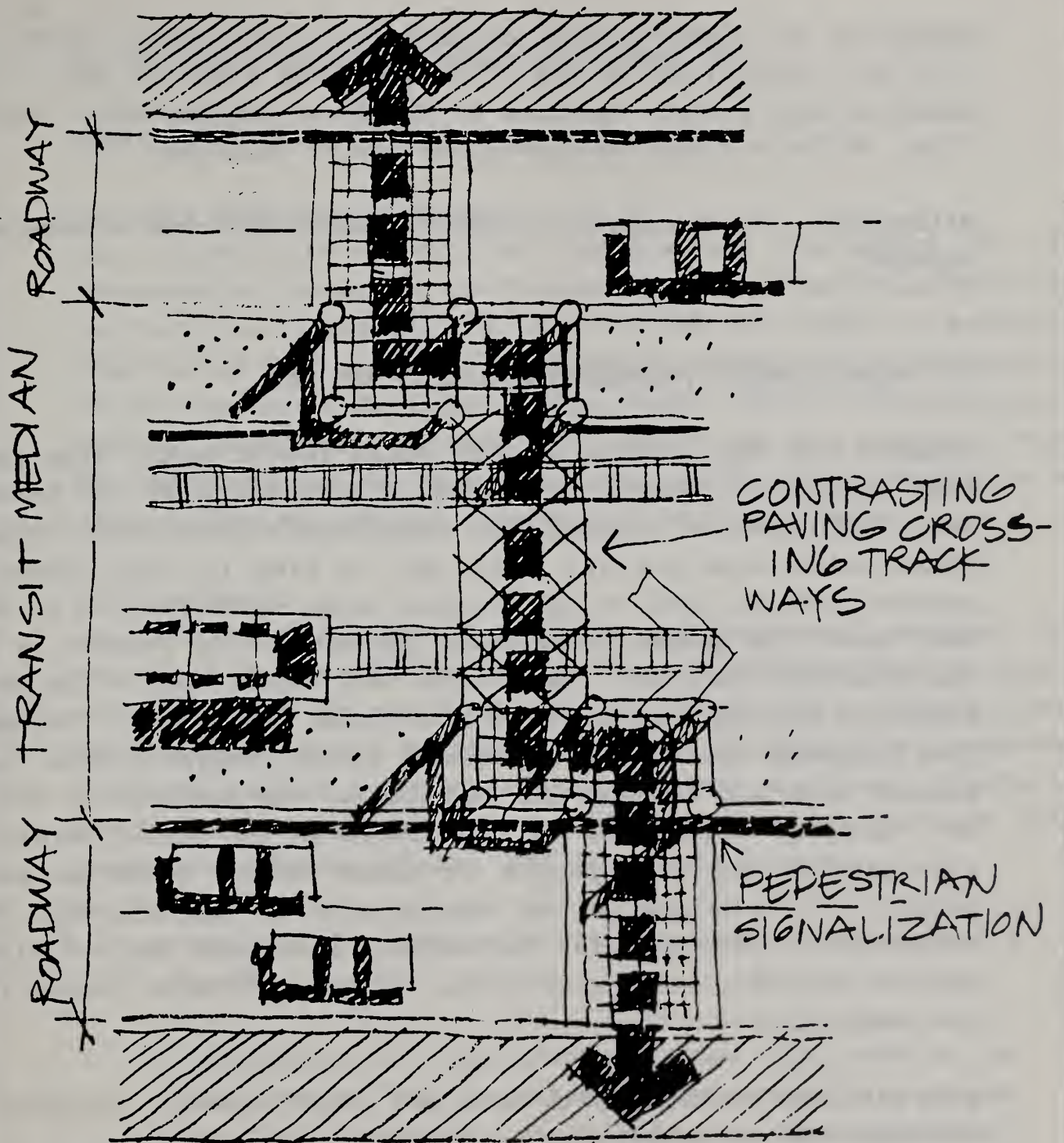
**Pedestrian Mitigation:**

To increase the safety and convenience of pedestrian crossings, it is planned to provide signalized Z-safety crossings at most of the midblock crossings as shown in Figure 17. Pedestrians tend to be more aware of oncoming vehicles because the Z-Crossing, by its very configuration, forces pedestrians to turn towards oncoming transit and traffic when crossing.

**H. AIR QUALITY IMPACTS (Checklist Number 16 and 18)**

**Impact:** The project would not generate additional vehicle trips. The San Francisco Department of City Planning has prepared an Air Quality Study for the project to determine whether the project could result in any adverse effects on air quality at any location. The study is summarized in Section IV. The study concludes that the project generation of Carbon Monoxide (CO) pollutants at the most congested intersections would be less than today and would be below the State and Federal standards. CO levels are expected to decline in the future largely because of technological advances that make car engines burn fuel more efficiently and reductions due to the Vehicle Inspection and Maintenance (I/M) program. CO reductions are predicted to outpace increases in traffic on The Embarcadero. The highest predicted levels of CO are still below the State standard.

In addition, emissions of sulfur oxides generated by the project and by cumulative development would not bring sulfur dioxide concentrations measurably closer to violating the standard. Therefore, the proposed project would not result in any adverse air quality impacts. The 1982 Bay Area Air Quality Plan, contains strategies aimed at attaining the Federal ozone and CO standards. The strategies consist primarily of HC and CO emission controls on stationary sources and motor vehicles, and transportation improvements. Emissions associated with this project and with cumulative development in San Francisco are not



**Z Mid-Block Crossing**

# EMBARCADERO ROADWAY PEDESTRIAN CROSSINGS

SOURCE: URBAN DESIGN STUDY, BECHTEL INC.

FIGURE 17

projected to increase ozone concentrations that would conflict with the objectives of the Plan regarding ozone or CO. In addition this project conforms to the State Implementation Plan (SIP), which contains transportation control measures.

**Mitigation:** No mitigation is required since there are no adverse impacts.

**I. NOISE IMPACTS (Checklist Number 19 and 20)**

**Impact:** The high existing ambient noise levels result from the high volumes of traffic primarily on Interstate 80 and State Route 480 (elevated freeway) that occur within the project area. Sound walls have not and would not be used in this project corridor because much of the existing noise comes from 30 to 60 feet above the ground and because the project is located in a protected view corridor. Sound walls would block view of the San Francisco Bay and waterfront. Future noise levels may be higher from increased traffic due to regional growth, however, since the project does not increase the capacity of the roadway, it does not directly contribute to the increase in noise levels. Intermittent small increases in noise levels would be due primarily to acceleration and deceleration at approximately 25 additional traffic signals. The signals occur over the 2.9 mile project corridor, and therefore the increase in noise levels is not cumulative.

**Mitigation:** The impacts are not significant, therefore mitigation is not warranted.

**J. CULTURAL RESOURCES (Checklist Number 47)**

**Impact:**

The Belt Line Freight Railway

The conclusion of the City and County's June 1989 report entitled "Information Concerning the Eligibility of the Belt Line Railway" is that the integrity of the Railway has been so severely compromised that it is not an eligible property for consideration on the National Register. The State Historic Preservation Officer (SHPO) has reviewed this report and has concurred that the Belt Line Railway does not retain sufficient integrity to be eligible for the National Register of Historic Places.

Architectural

As part of the current roadway environmental studies for buildings in the APE, the City has made a determination of effect of the project on all buildings on or eligible for the National Register, and on all buildings which are San Francisco Landmarks. Such buildings were evaluated against National Historic Preservation Act criteria to determine if the project will produce an adverse effect. The five criteria are:

- o Physical destruction or alteration of all or part of a property
- o Isolation of the property from the setting or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register
- o Introduction of visual, audible or atmospheric elements that are out of character with the property or alter its setting

- o Neglect of a property resulting in its deterioration or destruction (applies to Federal properties only)
- o Transfer, lease, or sale of the property (applies to Federal properties only)

After applying the Criteria of Effect of Section 106 to each of the buildings in the Area of Potential Effect (APE), the City determined that The Embarcadero Surface Roadway Reconstruction Project will have no effect on any of the buildings or bridges. The State Historic Preservation Officer has reviewed this determination and has concurred that the Embarcadero Surface Roadway Reconstruction will have no effect on historic properties (Appendix C).

The project will not result in any changes to any of the qualities which make these historic resources significant. The proposed roadway alignment is relatively unchanged from the current alignment and will not diminish the integrity of the properties' location, design, materials workmanship or association. In some cases, the reconstruction of the roadway will enhance the setting of the buildings and structures, by providing landscaping and street furniture, and by opening up or framing views to and from these buildings. The potential for elements being introduced that are out of character with the property is a possibility but will be carefully considered in the context of overall roadway design concept.

The San Francisco Landmarks Preservation Advisory Board believes that air pollutants resulting from increased traffic at the proposed connection between King Street and The Embarcadero would coat exterior walls of historic buildings, potentially damaging building materials. Although this project would not cause a measurable increase in traffic on The Embarcadero, the conditions are different for King Street. Currently, King Street



does not extend between Second Street and The Embarcadero. Between Third Street and The Embarcadero, King Street would receive traffic that now travels one block away. The only eligible buildings on King Street are the Castle Brothers Warehouse and the Southern Pacific Warehouse, neither of which is significant for architectural features.

There is also concern that increased vibration and noise from traffic could cause or hasten structural failure of the buildings. The noise and vibration levels will not measurably increase due to the project. City and County of San Francisco structural engineers do not believe vibration and noise to be a cause of structural failure under any normal circumstances. The original setting of the buildings included steam engines and pile drivers.

There will be some temporary effects due to construction. The construction of new storm sewers will involve dewatering to just below the level of construction. The Board also believes that this temporary lowering of the water table could cause wood piles supporting historic buildings to become infected with parasites which rot wood, potentially causing structural foundation damage to the buildings. This belief is based on a situation that occurred during the construction of a large box sewer where excavation and dewatering went to a depth of 20 to 30 feet and lasted for several weeks. The proposed project excavations are not expected to exceed 12 feet, and biologists indicate the risk of pile damage under these circumstances to be unlikely.

#### Archaeological

Archival study coupled with the findings of previous archaeological research indicates that there is little likelihood of encountering significant cultural resources from the Prehistoric, Spanish/Mexican, or Early American periods within the present APE. There is a possibility of encountering

resources from the Gold Rush Period. Proposed excavation for the project is shallow, usually not exceeding a few feet except for periodic drainage structures that may require excavation up to 10 feet.

**Mitigation:** Any impacts to architectural resources would be insignificant. The project would not diminish the integrity of the properties' location, design, setting, materials, workmanship, feeling or association. Upon completion of construction, the setting for many of the properties will be enhanced.

Construction excavation for catch basins and storm sewers would be 8 to 12 feet below present street grade in the vicinity of Steuart and Folsom Streets. Adverse impacts to the Lydia will be avoided by excavating no deeper than two feet within 80 feet of the resource.

The archaeological consultant, in consultation with representatives of the City and County of San Francisco, has determined that planned subsurface excavation exceeding a depth of 4 feet below present street grade, will occur in a few areas of demonstrated or potential archaeological sensitivity. Potentially significant Gold Rush maritime resources may be present. Therefore, prior to any construction activity within this portion of the APE, a program of pre-construction archaeological testing was recommended. The placement of an appropriate number of mechanical exploratory borings within this part of the APE represents the most efficient means of determining the presence or absence of postulated Gold Rush ship hulks within this portion of the project area. Such pre-construction testing can be conducted once roadway design has progressed to the point where exact locations of proposed excavations which will exceed 4 feet in depth in sensitive areas are known.

It was recommended that an archaeological monitor be present on site to observe construction excavation which exceeds a depth of 6 feet below present grade in 1) the vicinity of the intersection of The Embarcadero and North Point Street; 2) along the project alignment between the intersection of The Embarcadero and Market Street to the intersection of Folsom and Steuart Street; 3) along King Street between Third and Sixth Streets; and 4) in areas where the Old Sea Wall may be encountered. If any of the above cultural resources are encountered during the course of on-site monitoring, the archaeological consultant shall describe the findings that have been made, assess their significance and integrity and, if necessary, make recommendations for appropriate mitigative procedures.

If any unanticipated subsurface cultural resources are encountered during the course of construction within the project area, it is recommended that all earthmoving activity in the area of impact cease immediately until a qualified archaeological consultant has been given an opportunity to examine the findings, assess their significance and carry out appropriate recommendations for the further investigation and/or mitigation of adverse impacts.

The State Historic Preservation Officer has reviewed and approved the proposed plan for preconstruction testing and construction monitoring.

#### **J. CONSTRUCTION ACTIVITIES (Checklist Number 50)**

##### **Noise Impact:**

The reconstruction of the Embarcadero surface roadway would involve the use of noise-generating diesel-powered heavy equipment such as dump trucks, graders, and bulldozers, as well as pneumatically-driven impact hammers.

Most types of diesel-powered heavy construction equipment produce noise levels of 79-84 decibels at a distance of 100 feet. Noise levels drop by 6 decibels for every doubling in distance separation from a fixed source. The equipment produces loud noises but currently the ambient noise levels in the area, primarily from traffic, range from 65-75 decibels. The construction noise would occur over a period of several days in each location for a period of two to three years for the 2.9-mile corridor.

Temporary increases in noise and vibrations would occur during the construction period. Duration will be limited in any one location as the project will be constructed in segments over a two to three year period. The intensity will vary depending on the distance between the receiver and the source.

Noise Mitigation:

Where feasible, abatement of some of the construction noise will be done. Project construction will meet the requirements of the San Francisco Noise Ordinance (Ordinance 274-72, Regulation of Noise, Section 2907). The ordinance requires a special permit for construction after 8:00 pm and before 7:00 am. Construction will occur on weekdays and some weekends.

Air Quality Impact:

Short term air quality impacts would result from construction activities which create dust, such as the removal of existing roadway pavement storm sewer excavation, and the grading needed for reconstruction. There would also be emissions of air pollutants from the construction vehicles and gasoline or diesel-powered equipment. Their emissions would be temporary and much less than those due to traffic on the roadway.

Air Quality Mitigation:

The construction area will be watered regularly to reduce the generation of dust. The City standard specifications include measures regarding the use and storage of fuels, glues, resins and solvents. The Contractor will comply with these measures.

Circulation Impact:

Presence of construction workers, changeover of driving lanes and off-peak detours would all have a temporary effect on circulation patterns. Roadway construction could also create a temporary decrease in vehicular access to adjacent businesses resulting in a possible loss of revenues.

During weekday peak periods, unless two lanes are open in each direction, congestion occurs. Intersections north of Battery Street and The Embarcadero are also affected by tourist and recreation traffic of Fisherman's Wharf. These northern Embarcadero intersections are especially congested on weekends from Memorial Day to October 1. On Columbus Day, 1992, a major anniversary celebration will take place in San Francisco, affecting all waterfront circulation.

Circulation Mitigation:

The above circulation concerns will be reflected in construction contracts. Roadway construction would not occur during weekday or weekend peak periods at key intersections. Additional construction restrictions will be considered. Coordination with utilities and other projects will take place to minimize lane closures in off-peak hours. Advance signing of road closures and detours will be employed when necessary. Regular meetings will be held to update the residential and merchant community of construction locations, schedules and traffic patterns.

**K. CUMULATIVE IMPACTS (Checklist Number 53)**

There are several projects in the project area or adjacent to it which are in the planning and environmental review phase. They are the F-Line Historic Streetcar, the MUNI Metro Extension, the MUNI Metro Turnaround, the I-280 King Street Ramps, the Fisherman's Wharf Development Program, the Underwater World Aquarium at Pier 39, Caltrain Terminal Relocation, Rincon Point/South Beach Redevelopment Program, and the housing and/or housing/arena development at Seventh and Townsend Streets, and Mission Bay.

The analysis done for this project is based on growth factors and historical trends. Most of the data for other projects is projected to the year 2000. Growth rates are general and encompass growth from unknown future projects as well as projects currently proposed. Growth factors for the greater downtown area assume growth in the Northeastern Waterfront (Battery/Sansome corridor), C-3 District (downtown), South of Market, Mission Bay and Civic Center/South Van Ness areas. The other projects are not individually accounted for.

The Caltrans I-280 King Street Ramp Project has used a different method to project future traffic demand. Because the elevated ramps are more permanent structures, Caltrans has ignored the limiting capacity of the I-280/U.S. 101 junction to the south and the existing street grid system. The Caltrans EIR considers unconstrained demand, that is demand constrained only by intersection capacity within the immediate limits of the King Street and Sixth Street ramps to I-280.

Related transportation projects (The F-Line, the MUNI Metro Extension and the MUNI Metro Turnback) would serve similar purposes as the project being analyzed here. They would be

constructed in the same project area. Their impacts on historic and cultural resources would be similar to those for this project.

**Mitigation:** Rail transit provided by the San Francisco Municipal Railway (and possibly the Caltrain Peninsula Commute Service) is proposed as appropriate mitigation to offset the cumulative impacts of growth occurring in or adjacent to the Embarcadero corridor.

Adjacent residential developments may require additional noise-reduction construction measures to those employed for ambient noise.





## VII. CONSULTATION, COORDINATION AND COMMENTS

Throughout the planning and environmental evaluation processes for The Embarcadero Surface Roadway Reconstruction project, the City and County of San Francisco has coordinated and consulted with relevant Federal, State, and other local government agencies. Ongoing consultation and coordination has occurred between the City, the Port of San Francisco, the San Francisco Redevelopment Agency, Caltrans, BCDC, FHWA, and the State Historic Preservation Office.

Over the last 18 months, six Citizen's Advisory Committee meetings have been held to invite comment on various aspects of the proposed project and technical studies that have been prepared as part of the ongoing process.

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Mara Melandry

## IX. BIBLIOGRAPHY AND REFERENCES

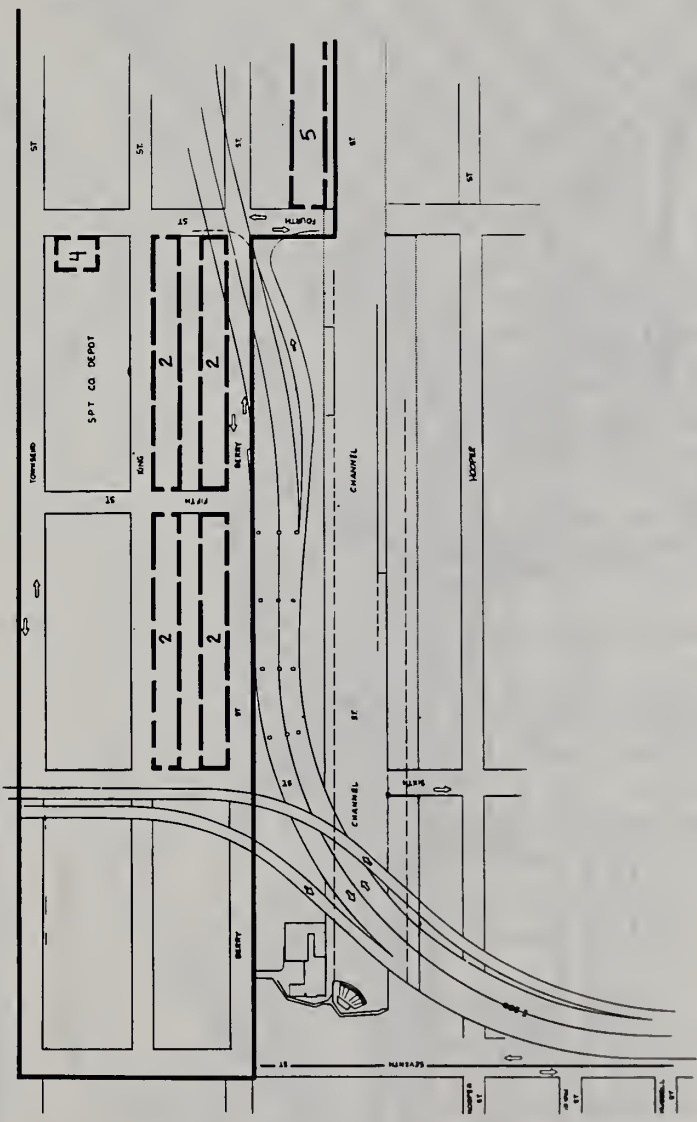
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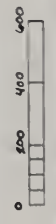


**APPENDIX A**





**LEGEND**  
 ——— AREA OF EFFECT, HISTORY & ARCHITECTURE



CITY AND COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING	
PROJECT NO. 11111 SHEET NO. 1 OF 5	DATE 11/11/11
DRAWN BY: [Name] CHECKED BY: [Name] APPROVED BY: [Name]	TITLE: EMBARCADERO ROADWAY AREA OF POTENTIAL EFFECT

NO.	DATE	REVISIONS

DATE OF CHANGE: 11/11/11  
 CHECKED BY: [Name]  
 APPROVED BY: [Name]



THESE BUILDINGS IN SOUTH BEACH  
 HISTORIC WAREHOUSE / INDUSTRIAL DISTRICT

128 KING ST. (CASTLE BROS. WAREHOUSE)

126 KING ST. (SP WAREHOUSE)

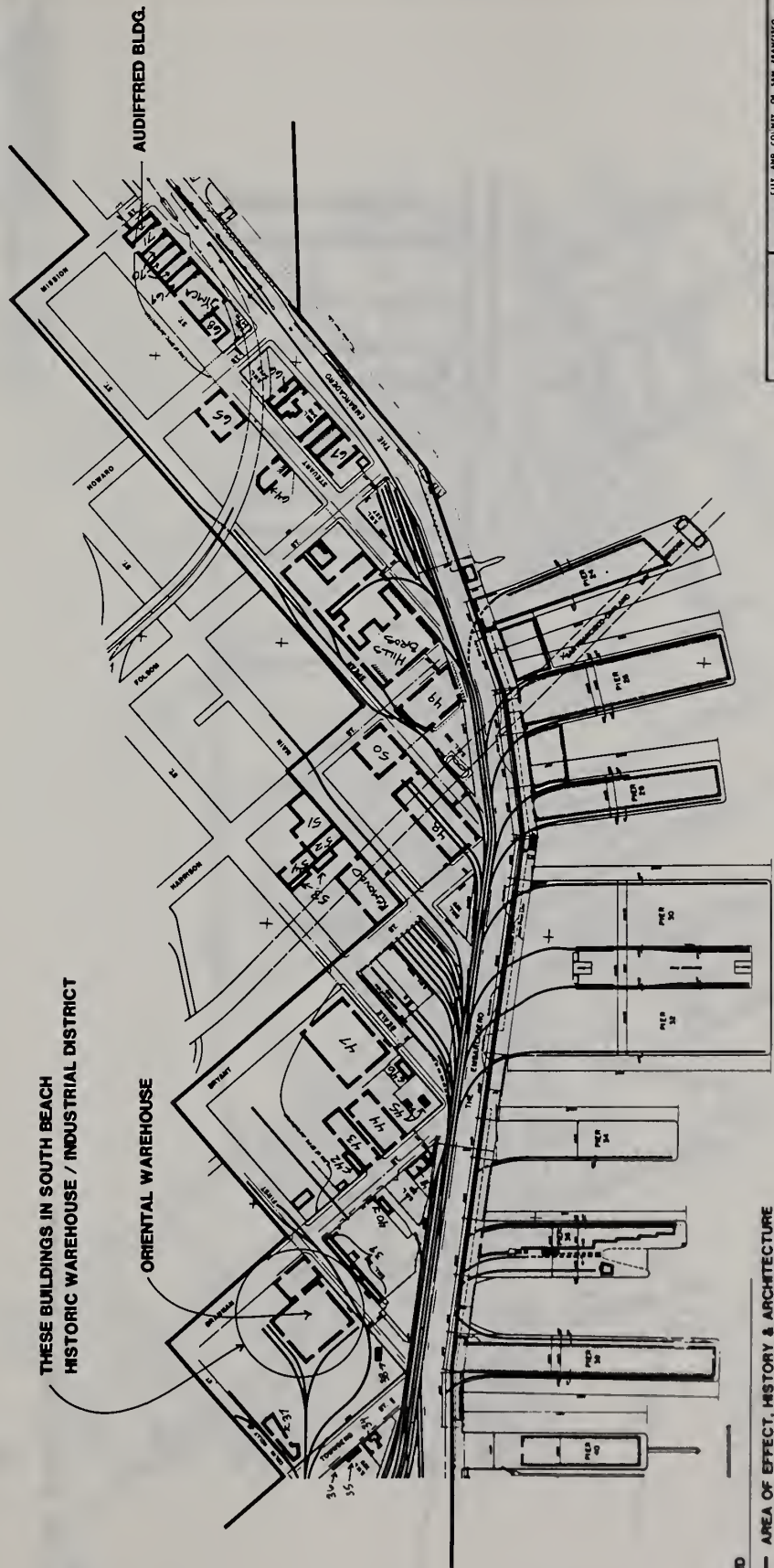


**LEGEND**  
 — AREA OF EFFECT, HISTORY & ARCHITECTURE

APPROVED FOR THE CITY	CITY ENGINEER	DATE	APPROVED FOR THE STATE	DATE
APPROVED FOR THE COUNTY	COUNTY ENGINEER	DATE	APPROVED FOR THE DISTRICT	DATE
CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING		EMBARCADERO ROADWAY AREA OF POTENTIAL EFFECT		
SCALE 1/8" = 1'-0"		SHEET 2 OF 5		

NO.	DATE	REVISION



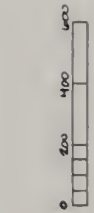


THESE BUILDINGS IN SOUTH BEACH  
HISTORIC WAREHOUSE / INDUSTRIAL DISTRICT

ORIENTAL WAREHOUSE

AUDIFFRED BLDG.

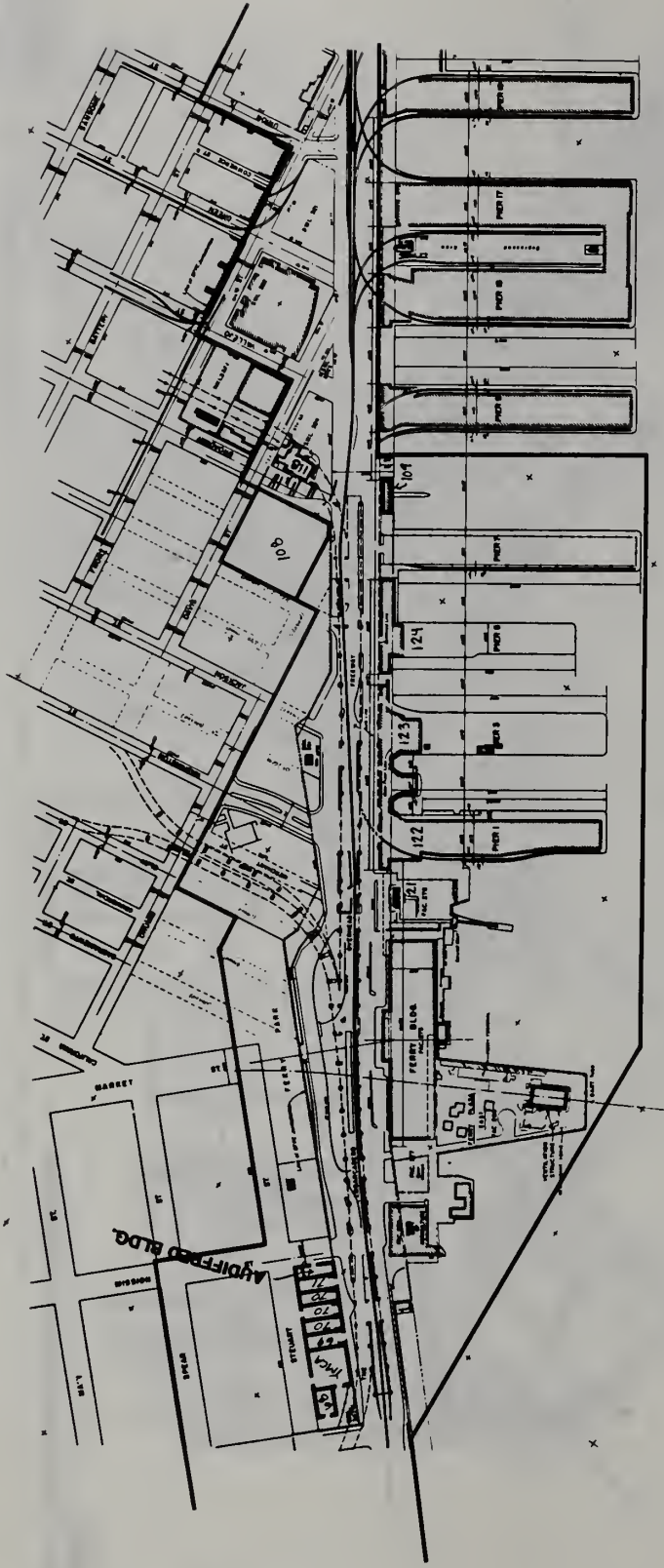
LEGEND  
— AREA OF EFFECT, HISTORY & ARCHITECTURE



APPROVED BY DATE	CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING
DESIGNED BY DATE	EMBARCADERO ROADWAY AREA OF POTENTIAL EFFECT
CHECKED BY DATE	1
PROJECT NO.	SCALE 1/8" = 1'-0"
DATE	SHEET 5 OF 5
PROJECT TITLE	PROJECT NO.

NO.	DATE	REVISIONS

DATE OF CHANGES  
BY  
REASON



**LEGEND**  
 ——— AREA OF EFFECT, HISTORY & ARCHITECTURE

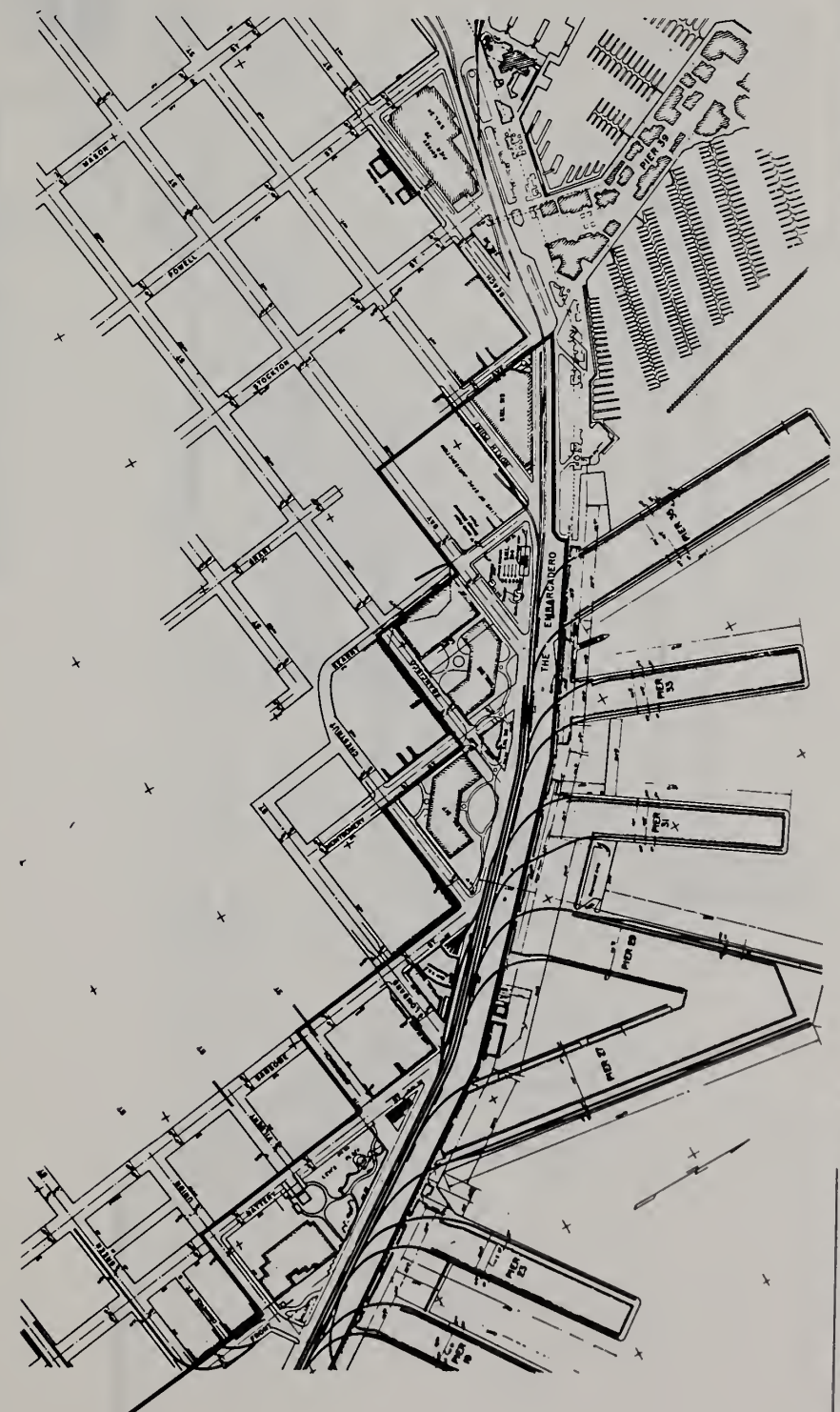
CITY AND COUNTY OF SAN FRANCISCO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING

EMBARCADERO ROADWAY  
 AREA OF POTENTIAL EFFECT

DATE	BY
1978	J.F.
REVISION	
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CITY ENGINEER  
 DATE



**LEGEND**

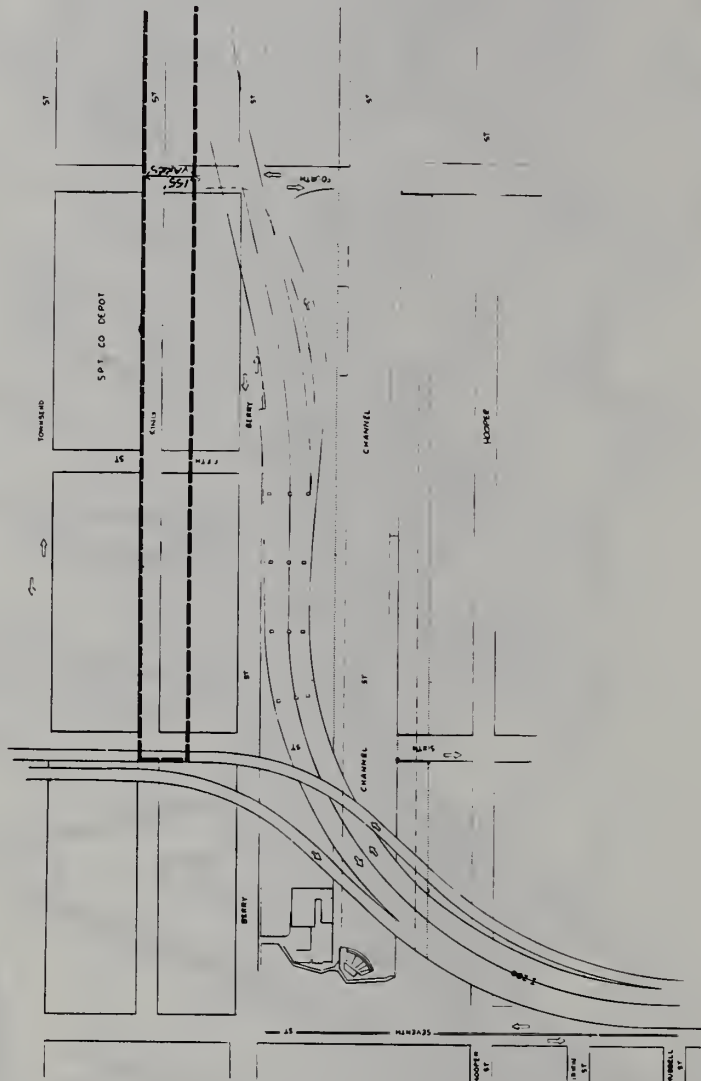
— AREA OF EFFECT, HISTORY & ARCHITECTURE

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING	
PROJECT AND SHEET NO.	EMBARCADERO ROADWAY
DATE	1917
SCALE	AS SHOWN
EMBARCADERO ROADWAY AREA OF POTENTIAL EFFECT	

NO.	DATE	DESCRIPTION



ENGINEER: [Name] ARCHITECT: [Name]  
CITY ENGINEER: [Name]



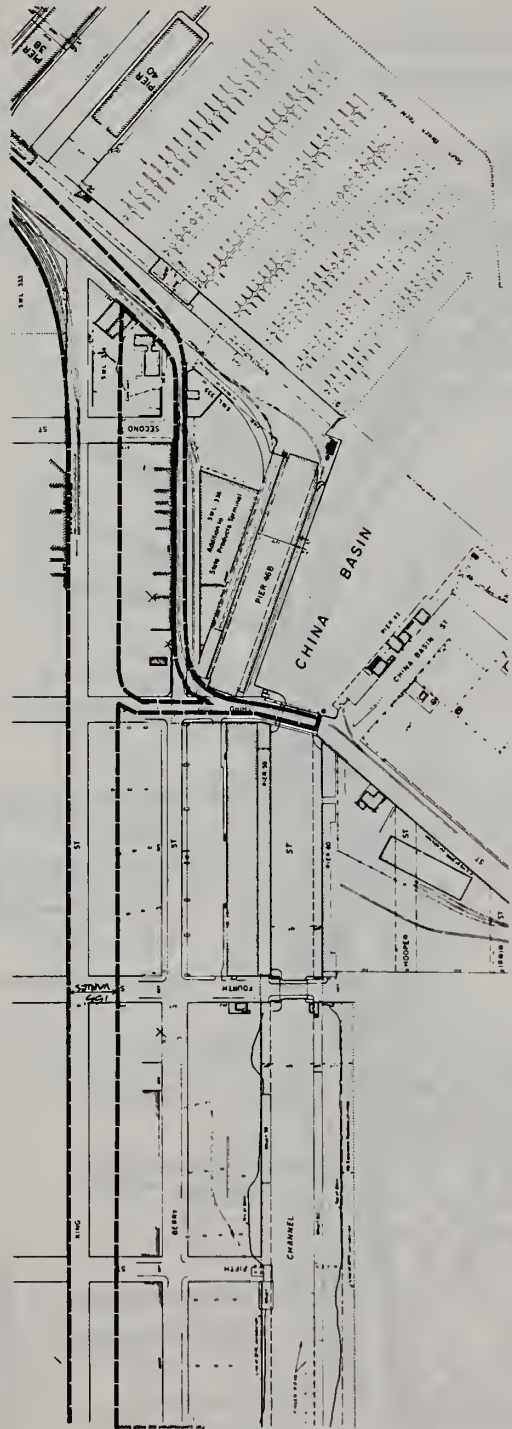
**LEGEND**  
 - - - - - AREA OF EFFECT, ARCHAEOLOGY

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING		EMBARCADERO ROADWAY AREA OF POTENTIAL EFFECT	
PROJECT NO.	DATE	SCALE	SHEET 7 OF 5
DESIGNED BY	11	1/4" = 1'	PROJECT
DRAWN BY			
CHECKED BY			
APPROVED BY			
DATE			

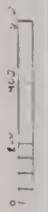
NO.	DATE	NAME OF CHANGES	INITIALS
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CHANGES MADE SINCE THE DATE OF THE LAST REVIEW





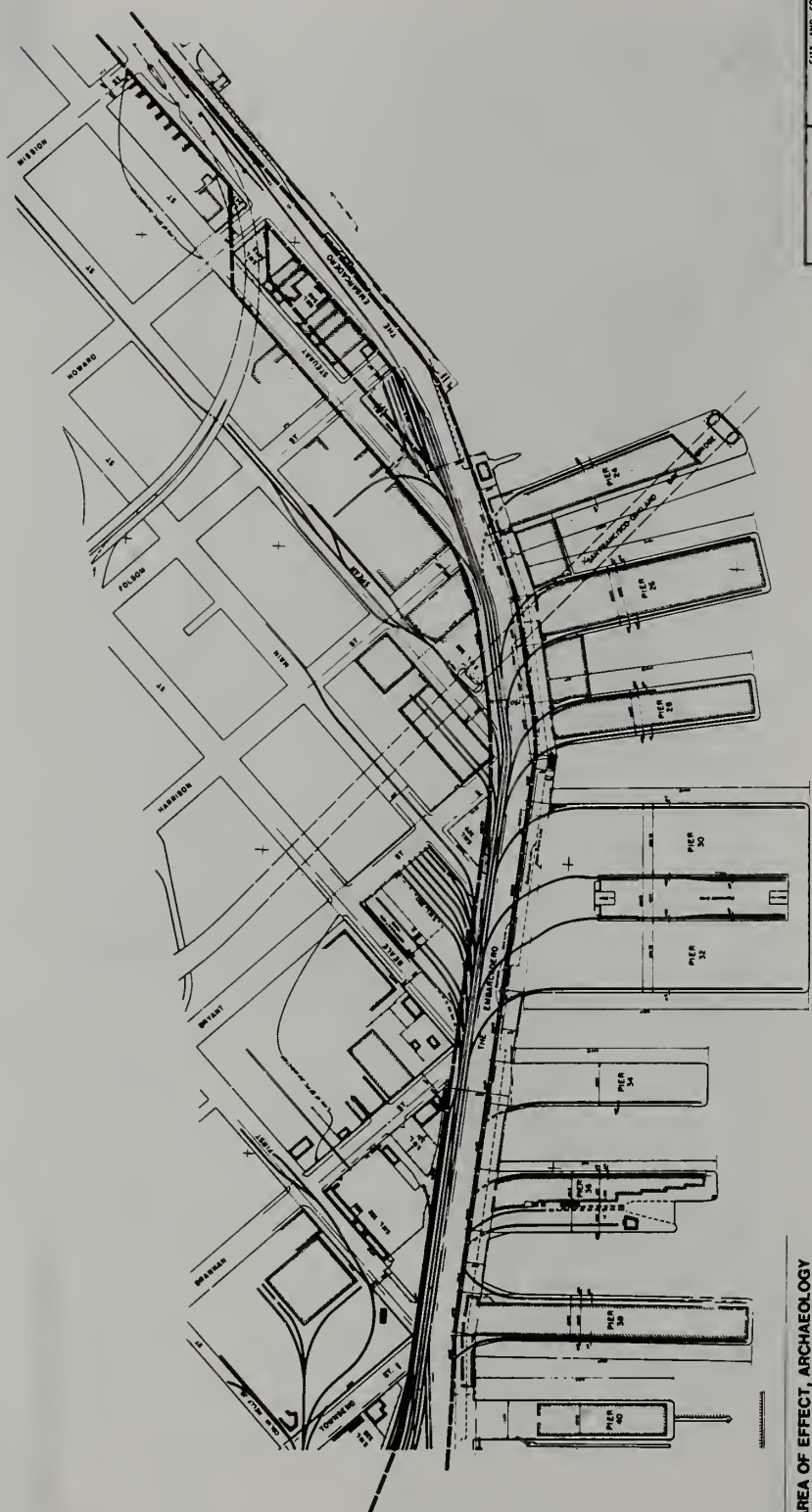
**LEGEND**  
 --- AREA OF EFFECT, ARCHAEOLOGY



CITY OF SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING	
PROJECT: 200 100' OF SANITARY PIPING FOR THE	SHEET: 7 OF 5 TOTAL SHEETS
DATE:	CITY ENGINEER:
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVED BY:
SCALE:	DATE:

**EMBARCADERO ROADWAY  
 AREA OF POTENTIAL EFFECT**

TITLE: CHANGED ROW - SOUTH OF MARKET ST.
SCALE:
DATE:
PROJECT:
SHEET:
TOTAL SHEETS:

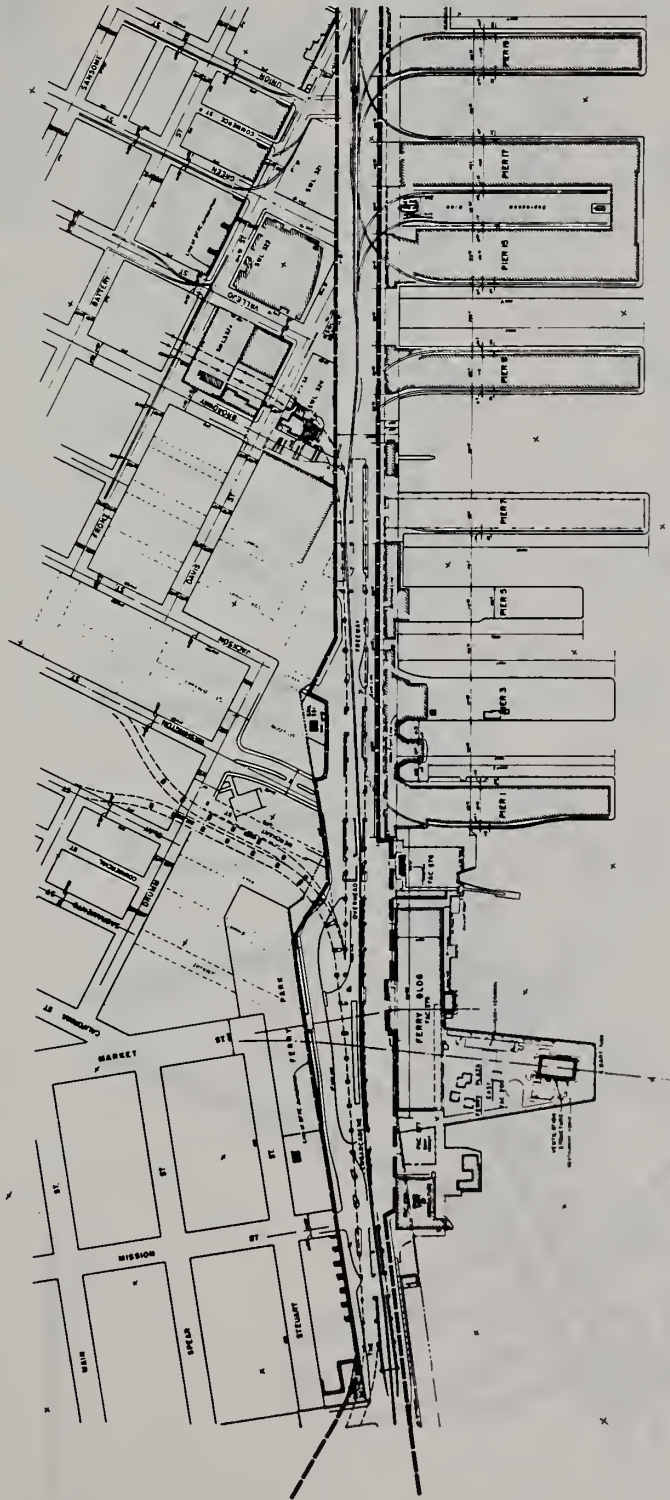


**LEGEND**  
 - - - - - AREA OF EFFECT, ARCHAEOLOGY

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING		EMBARCADERO ROADWAY AREA OF POTENTIAL EFFECT	
DRAWN BY CHECKED BY APPROVED BY	DATE 1/18/57	SCALE AS SHOWN SHEET 3 OF 5	CITY ENGINEER

NO.	DATE	DESCRIPTION	BY



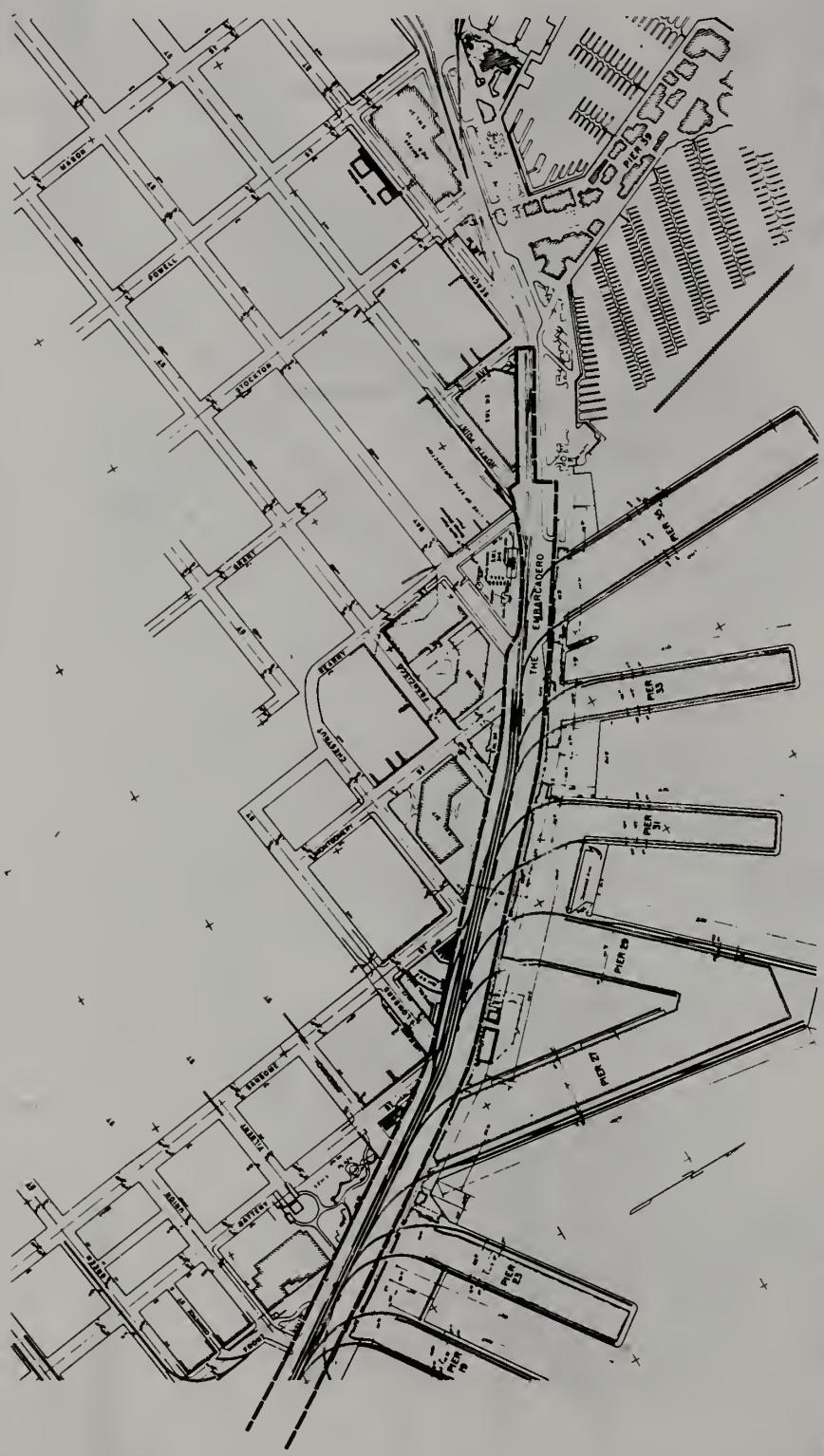


LEGEND  
 - - - - - AREA OF EFFECT, ARCHAEOLOGY

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING	
EMBARCADERO ROADWAY AREA OF POTENTIAL EFFECT	
APPROVED BY: DATE: 11/11/11	SCALE: AS SHOWN
DESIGNED BY: DATE: 11/11/11	PROJECT NO.: 1111
DRAWN BY: DATE: 11/11/11	PROJECT NAME: EMBARCADERO ROADWAY
CHECKED BY: DATE: 11/11/11	PROJECT NO.: 1111
DATE: 11/11/11	PROJECT NAME: EMBARCADERO ROADWAY

THIS CHANGE IS MADE TO THE ORIGINAL DRAWING IN ORDER TO CORRECT THE ERROR IN THE ORIGINAL DRAWING.





**LEGEND**  
 - - - - - AREA OF EFFECT, ARCHAEOLOGY

CITY AND COUNTY OF SAN FRANCISCO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING

EMBARCADERO ROADWAY  
 AREA OF POTENTIAL EFFECT

SCALE: AS SHOWN  
 SHEET 5 OF 5  
 DATE

NO.	DATE	REVISIONS	BY	CHKD.

0 200 400 600

## APPENDIX B



PORT OF SAN FRANCISCO



Ferry Building  
San Francisco, CA 94111  
Telephone 415 274 0400  
Telex 275940 PSF UR  
Fax 415 274 0528  
Cable SFPORTCOMM  
Writer 274-0401

October 5, 1989

Mr. Vitaly B. Troyan  
Chief, Bureau of Engineering  
Department of Public Works  
Room 359, City Hall  
San Francisco, CA 94102

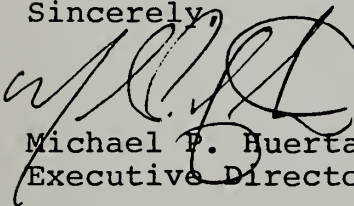
Dear Mr. Troyan:

In response to your August 25, 1989 letter, the Port has completed review as requested. Working design for the following Preferred Projects from the I-280 Transfer Concept Program is approved:

- \* Embarcadero Roadway (North and South)
- \* Muni Metro Extension
- \* F Line (formerly E Line)
- \* I-280 Stub-end Removal and Ramp Replacement

Thank you very much for providing the necessary information for review and for briefing the Port Commission. Port staff is committed to continue to work with you to ensure successful completion of this worthy project.

Sincerely,

  
Michael P. Huerta  
Executive Director

MPH/AMO:mm

cc. Bransten  
Keene-  
wright





## APPENDIX C



OFFICE OF HISTORIC PRESERVATION  
DEPARTMENT OF PARKS AND RECREATION

POST OFFICE BOX 942896  
SACRAMENTO, CALIFORNIA 94296-0001  
(916) 445-8006



FHWA900926B  
October 22, 1990

Bruce E. Cannon, Division Administrator  
Federal Highway Administration  
P. O. Box 1915  
Sacramento, CA 95812-1915

Re: Embarcadero Roadway, San Francisco, IXD-280-1(865)

Dear Mr. Cannon:

Thank you for the opportunity to comment on the Historic Property Survey Report for the proposed Embarcadero Roadway project in San Francisco. We appreciate the efforts of your office, Caltrans, City staff, and consultants in preparing the HPSR for this complex project, and thank everyone who helped provide the documentation to resolve questions of eligibility and effect.

After thorough consideration of the differing professional opinions, we must concur in your determination that the King and Berry Streets Freight Distribution District is not eligible for the National Register of Historic Places. In another city, the district could well be found eligible, but in the context of San Francisco's impressive industrial architecture, it does not possess the same relative level of distinction. There are other groupings and individual buildings that more clearly and effectively represent the style in the city, and there are also better examples of the architect's work.

In addition, we agree that the project as described will have no effect on historic properties. The careful process outlined for any ground disturbance should ensure avoidance of archeological sites, and the surface roadway and sidewalk improvements in the vicinity of historic properties will have minimal potential for effect.

Thank you for your cooperation. If you have any questions, please call staff historian Dorene Clement at (916) 322-9600.

Sincerely,

Kathryn Gualtieri  
State Historic Preservation Officer





